Vast Iron Ore Reserve in South America, Undeveloped

Deposits Are Largest of Any of the Continents —Coking Coal Scarce —A Glimpse of Future Possibilities

By Olin R. Kuhn

SOUTH AMERICA probably contains the largest reserve of high-grade iron ore of any of the continents and the reserve is practically undeveloped. There are vast unexplored regions in the interior and as these are opened up it is possible that the tonnage of iron ore will be materially increased. Also, as iron and steel industries are expanded in the various countries the known deposits will be developed and some day South America will be one of the large exporters and consumers of iron ore.

The area of South America, some 6,889,000 square miles, is about double that of the United States, but the population is only one-half that of this country. The known iron ore reserves of South America are approximately 8,700,000,000 tons, 15 per cent of the world's supply, although only about 1 per cent of the world's production is mined on that continent.

The absence of rich, extensive coal fields has been a great handicap to the development of Latin American countries. In only a few districts are coal mines being operated to any extent and few of these supply coal suitable for coking. The principal coal regions are the subbituminous coal fields of southern Chile, the sub-bituminous and bituminous coal basins of northern Peru, Colombia and Venezuela, and the bituminous coal district of southern Brazil. The latter field is the only one within reasonable distance of the iron ore districts, but unfortunately the coal is rich in pyrite. Foreign interests, especially English, American, French and German have been buying up the iron ore lands of South America. At present practically the only iron ore mines operating are the Tofo mines in Chile; all the ore is exported to the United States.

The largest known iron ore deposits are found in Brazil, Peru, and Chile. Smaller deposits are scattered throughout the other countries. Most of the ore is a high-grade hematite which averages close to 60 per cent iron. The total reserve of South America in terms of metallic iron can be put at about 5,220,000,000 tons.

The few ore deposits in Argentina are small and of inferior quality. Lack of coal and difficulties of transportation militate against the utilization of most of the deposits. There is, however, a flourishing industry in the manufac-

IRON ORE HILL AT BETHLEHEM STEEL CORPORATION'S MINES AT TOFO, CHILE

Iron Ore Reserves of South America

	Reserve tons	Per cent tons
Argentina:		
Catamarca	No estimate	57.12
Andes	No estimate	50-60
Bolivia:		
Santa Ana	No estimate	.....
Brazil:		
Minas Geraes	3,500,000,000	50-70
Rest of Brazil	4,000,000,000	.....
Chile:		
Tofo, Coquimbo	200,000,000	67.50
Rest of Coquimbo	No estimate	.....
Antofagasta	No estimate	55-62
Algarrobo, Atacama	200,000,000	68.00
Canaral, Atacama	500,000	60.00
Rest of Atacama	No estimate	64.00
Valdiva	40,000,000	60.00
Dutch Guiana:		
Donderbary	100,000,000	40-60
Paraguay:		
San Miguel	No estimate	40-50
Peru:		
Marcona	500,000,000	60-65
Huacravilca, Huancaya	64,000,000	67-70
Rest of Huancaya	No estimate	42-70
Uruguay:		
Zapucay	80,000,000	35.00
Venezuela:		
Orinoco	10,000,000	66.50
Piacoa	5,500,000	59.50
Total reserve	8,700,000,000	

ture of steel from imported pig iron. Argentina imports from 200,000 to 500,000 tons of iron and steel products annually but no iron ore or pig iron ore is produced.

Iron ore is known to occur in various parts of Bolivia and large deposits are reported to exist in the province of Santa Ana, but no details are available as to their nature or extent. Bolivia has no iron industry and less than 35,000 tons of iron and steel products are imported annually. Deposits of coal are found at Beni in the north, at Capacabana in the west, and at Tarija in the south.

May Import Coal and Coke

Brazil covers about half of the area of South America and is said to contain the largest undeveloped reserve of high-grade iron ore yet known in the world. No large amount of ore has been produced to date in Brazil and the available reserve is estimated by E. C. Eckel to be about 7,500,000,000 tons, half of which is in the state of Minas Geraes. Brazil imports 300,000 to 600,000 tons of iron and steel products annually, but as yet has practically no iron industry.

There are only three or four blast furnaces in Brazil and they are small. The absence of suitable coal for coking makes the utilization of the ores in Brazil impracticable and their inaccessibility and the transportation difficulties have delayed their development. The ore deposits are controlled by English, American, French, German and Brazilian capital and as these countries begin to develop their holdings it will open up the possibilities of an iron industry in Brazil since the vessels carrying away the ore can be used to carry return cargoes of coal and coke. This will aid greatly in the industrial development of the country and it is possible that Brazil will then produce enough iron for at least her own needs. It has been stated by several authorities that the iron ore production of Brazil, some time within the next quarter century, will be more than 10,000,000 tons annually.

Two types of ores occur in Brazil; magnetite associated with igneous rocks found in the states of Minas Geraes, San Paulo, Parana and Santa Catharina; and hematite ores associated with sedimentary rocks in the state of Minas Geraes. The magnetite deposits are not so important as they are widely scattered but the hematite deposits, especially those in Minas Geraes, are very extensive.

The Minas Geraes iron ore deposits are situated about 300 miles north of Rio de Janeiro and are from 3000 to 5000 feet above the sea level. The chief outcrop begins at Congonhas do Campo extending through Antonio Pereira, Aqua Quente, and Caraca. A break follows to Itabira do Matto Dentro, where the ore again outcrops and continues to Gaspar Soares mountains. Another series of deposits extend from Pico d'Itabira do Campo through Taquaral, Piedade, and Cocaes. The English and Americans practically control all of the deposits in the Upper Rio Doce basin which is tributary to the Victoria a'Minas railroad. The Germans own a few deposits in the Rio Sao Francisco valley tributary to the Central Brazil railroad, and the French and Brazilians own scattered deposits. The English are the only ones that have done any developments to date.

Deposits 50 to 4000 Feet Thick

The hematite deposits of Minas Geraes occur in a sedimentary series of pre-Cambrian age resting on rocks of gneiss, granite and schists. This formation is known as itabirite and usually consists of alternate layers of granular quartz and iron oxide. The iron formation is variable in thickness, in some places being less than 50 feet and in others more than 4000 feet thick. It contains lenses and beds of good iron ore occurring interbedded with itabirite. Where the iron formation weathers at the surface a blanket consisting of

Analyses of South American Iron Ores

	Deposit	Iron	Silica	Sul.	Phos.	Mang.	Lime	Mag.	Alum.
Argentina:									
Catamarca..	Sierra de Ancasti	57.12	5.00	.040	....	....	....	2.46	1.20
Brazil:									
Minas Geraes.	Pico d'itabira do Campo	69.20	.37	.007	.010	.20	.18	.18	....
Chile:									
Coquimbo...	Tofo	67.50	2.50	.010	.011-.50	.20	....	....	....
Atacama....	Canaral	60.00	5.00	Tr.	.039	Tr.	Tr.	....	Tr.
Dutch Guiana:	Algarrobo	68.00	....	.028	.064	....	....	....	....
Dutch Guiana:									
Donderbary.	Good Ore	59.90	2.20	....	....	....	....	....	.20
	Poor Ore	43.50	3.60	....	....	....	....	....	18.20
Peru:									
Ica.....	Marcona	60-65	3.50	.01-.05	.02-.05	....	....	....	....
Huancago...	Huacravilca	67-70	1.9-13.0	.6-9.6	Tr.	....	....	....	....
Uruguay:									
Rivera.....	Zapucay	35.00	9.00	.05	.03	23.00	....	....	....
Venezuela:									
Oronoco....	Imataca	66.53	1.81	.045	.031	....	....	....	....
Piacoa.....	Colon	59.37	7.25	.07	.192	.07	....	....	....

Analyses of South American Coals

	Moisture	Vol. Mat.	Fixed C.	Ash	Sul.	BTU
Brazil:						
Imbausinho	7.68	17.62	48.94	25.76	3.14	8,098
Parana	2.62	29.54	38.62	29.22	11.80	10,420
Pernambuco	1.50	18.82	58.73	20.52	.32	.....
Ouebra Dentes	2.40	32.95	43.86	20.79	8.66	10,808
Rio Grande do Sul	6.05	29.09	41.33	23.53	4.00	10,715
Rio Grande do Sul	4.87	27.89	44.20	23.04	.60	11,117
Santa Catherina	1.05	19.17	35.45	44.33	3.34	9,351
Santa Catherina	1.21	26.00	47.88	24.88	6.41	11,970
Sano Apparado	2.37	15.83	58.66	23.14	7.95	10,711
Chile:						
Arauco	3.92	39.13	51.66	5.27	.85	13,400
Conception Prov.	8.30	34.33	50.09	7.26	2.86	11,400
Lota	4.73	34.85	58.35	2.05	.43	13,400
Venezuela:						
Araquita	.95	35.36	62.02	1.77	.98	.....
Araquita	5.30	39.90	51.40	3.40	....	.....
Orilla	3.80	33.25	58.70	4.25	....	.....
Simplicio	3.80	25.70	66.25	4.25	....	.....

ore fragments and itabirite cemented by limonite is formed and this may vary from a few inches to 10 feet in thickness. These itabirite ores have been classified as follows: Original or bedded ores, including hard massive ore; soft powdery ore and laminated or thin bedded ore; and the concentration ores including Canga or iron ore conglomerate; gravel ore; rubble ore and enriched itabirite.

The bedded ores are regarded as by far the most important, especially the hard massive ore which is the only type of ore considered at present in plans dealing with the development of the Brazilian iron industry. The hard massive ore is hematite with an admixture of magnetite and occurs in beds varying up to more than 450 feet in thickness and 3300 feet in length. This ore contains over 69 per cent of iron and is rarely more than 1 per cent in silica.

The soft powdery ore is hematite and generally occurs mixed with hard ore as lenses interbedded with laminated ores. The iron content varies from 50 to 69 per cent. Laminated ores consist of micaceous hematite and limonite where the ore has been hydrated. This ore varies from 50 to 68 per cent in iron content. The Canga type is the only one of the concentration ores of importance and varies from ferruginous clay to ore containing 65 per cent of metallic iron. The greater portion of the ores are of bessemer grade, especially the bedded ores, and the phosphorus content usually increases with the depth.

The itabirite ores of Minas Geraes analyze as follows:

	Per cent Iron	Per cent Phosphorus
Hard massive	69 to 70	0.003 to 0.020
Soft powdery	50 to 69.5	0.004 to 0.050
Laminated	50 to 68	0.003 to 0.070
Laminated, hydrated	63 to 67	0.050 to 0.300
Canga	50 to 65	0.100 to 0.300

The Pico d'Itabira do Campo deposit near the Central railroad is the most favorably situated in Brazil and the ore body is probably 150 feet thick. The Pico d'Itabira do Matto Dentro deposit and those along the Caraca mountains are the largest in the district and contain the same type of ore as found in the Pico d'Itabira do Campo district. Another important occurrence is that of Santa Barbara on the Serra Seana which contains two hills, Morro Agudo and Aqua Limpa. The ore here is almost pure hematite like that of the itabira deposits and averages about 68 per cent iron. It is estimated that there are at least 20,000,000 tons on the Morro Agudo hill and 30,000,000 tons on the Aqua Limpa hill that can be mined by quarrying. Iron ore from Pico d'Itabira do Campo averages as follows: Iron, 69.20 per cent; silica, 0.37 per cent; manganese, 0.20 per cent; lime, 0.18 per cent; magnesia, 0.17 per cent; phosphorus, 0.01 per cent; sulphur, 0.007 per cent and moisture, 0.12 per cent.

There are over 30 known iron ore deposits in Minas Geraes which contain from 10,000,000 to 50,000,000 tons each and it is generally accepted that there are at least 3,500,000,000 tons of high-grade ore in this state. Dr. Gonzaga de Campos states that there are 1,976,000,000 tons that can be mined by quarrying alone and also that there are probably 1,710,000,000 tons of Canga ore. E. C. Eckel states that the total reserve of Brazil can be estimated at about 7,500,000,000 tons.

Iron Ore Production in South America

	Chile	Venezuela	Total tons
1910	31,600	.....	31,600
1911	28,100	.....	28,100
1912	6,300	.....	6,300
1913	14,100	58,100	72,200
1914	63,500	2,400	65,900
1915	147,100	.....	147,100
1916	56,200	.....	56,200
1917	5,000	.....	5,000
1918	2,700	.....	2,700
1919	.....	.....	.....
1920	.....	.....	.....
1921	48,400	.....	48,400
1922	222,900	.....	222,900
1923	679,200	.....	679,200
1924	1,144,800	.....	1,144,800

Until recently there has been practically no iron industry in Brazil and its pig iron capacity has been limited to three small furnaces at Usina Esperanca, Usina Wigg, and

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MAP SHOWING PRINCIPAL IRON ORE AND COAL DEPOSITS IN SOUTH AMERICA

Large Uses of Steel In Small Ways

FEW articles of steel have a wider commercial range than those used for reinforcing packages and boxes and various other shipping containers. They include metal strapping, both flat and round, stitching wire, saw toothed corrugated pieces, box corner fasteners, basket and crate hooks, and numerous other specialties. They consume approximately 60,000 tons annually.

Of this total perhaps half is black annealed wire used in reinforcing baskets and for various other similar purposes. Close to 12,000 tons of the original total is black annealed sheet strip, or the flat bands, and 8000 tons, galvanized wide. At least 2000 to 3000 tons is galvanized strip for butter tubs, etc. Approximately 1000 tons go into galvanized, corrugated, saw toothed pieces, and about 1200 tons into plain galvanized shingle bands. Possibly 500 tons are required for narrow, flat coppered wire, used in stitching paper boxes. Fully 2000 to 3000 tons go into various small specialties too numerous to classify.

Metal bands for reinforcing boxes and crates, first came into use in 1890. Prior to that time hickory strips were used. The bands were first made from second quality sheets. Then first quality sheets were used, and about this time, the practice was begun of riveting the strips and selling them in reels.

John A. Roebling's Sons Co., Trenton, N. J., were the first to roll strips in continuous lengths. This was in 1897. Shortly after, the Washburn & Moen Co., Worcester, Mass., became engaged in this production and it was at this plant that the metal was first given the hard oil corrosion resisting finish that is characteristic of much of the box strapping of today. This process was suggested to the late Cornelius V. Terry, then works manager at Worcester, upon observing some oil tempered flat spring wire which had been rejected.

By 1802, the box strap tonnage of cold rolled material was about 3000 tons annually. Since that time and notwithstanding the increasing use of paper cartons, production has gained until it is now around 12,000 tons. Of this amount, about 15 per cent is shipped abroad, mostly in fabricated form, that is, embossed and punched. Germany is a large producer of this material, although largely in the plain form. It is estimated that of the world consumption of 60,000 tons of this metal strapping, close to 80 per cent is supplied by Germany.

This metal runs from 23 to 30 gage, although the bulk is from 25 to 29 gage, and is ⅝ to one inch in width. The strip is sold to the larger consumers in 50 and 60-pound reels, containing 2000 to 3000 feet.

It is interesting to note that in the earlier days this material took a goodly percentage of the cold rolled strip steel producer, whereas today, owing to the large quantities consumed in automotive and various other industries, the percentage is small.

Incidentally, one of the last of the larger consuming groups to take up the use of metal strip was the shippers of cotton goods. Long after metal strip had come into general use in most industries, cotton goods manufacturers baled their cloth with rope. The cost of steel for this purpose was admittedly less, but various strong prejudices against its use remained.

Two factors, in addition to the lower cost, did much to overcome these prejudices. One was the saving in shipping costs to foreign countries, and the other was the reduction in damage to the material while enroute. Transportation companies charged according to the cubic dimension. They would consider the size of the bale, and then add six cubic inches for expansion. By the use of steel strip the expansion of the bales was eliminated and a considerable saving in transportation costs thus resulted.

Relative to reduction in damage, one of the difficulties shippers had was with rats gnawing the ropes, apparently because of the oil they contained. The use of steel naturally did away with this problem. Today, the use of steel strip by cotton goods manufacturers is practically universal, more than 1000 tons being consumed annually.

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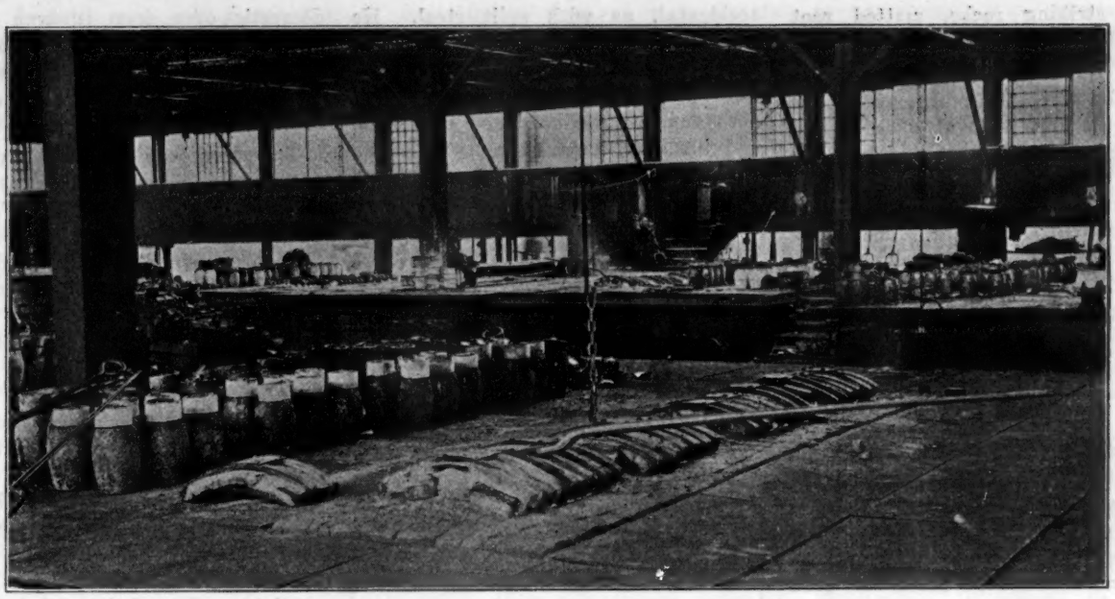
Metal Strapping

THIS is the sixty-first of a series of articles dealing with some of the obscure uses of steel which go far toward absorbing the great American tonnage.

The first article on "corsets" appeared Nov. 22, 1923. Other articles appearing fortnightly since are:

Pins	*Pens*
Cotton Ties	*Steel Wool*
Toys	*License Plates*
Spinning Rings	*Hypodermic Needles*
Card Clothing	*Shoe Steel*
Tie Plates	*Crushed Steel*
Tacks	*Skates*
Knives and Forks	*Needles*
Surgical Instruments	*Phonograph Needles*
Fence Posts	*Golf Clubs*
Eyeglass Cases	*Mechanical Pencils*
Fishing Tackle	*Burial Caskets*
Dental Drills	*Telephones*
Pocket Knives	*Radio Towers*
Rat Guards	*Brushes*
Snap Fasteners	*Electric Bells*
Paper Clips	*Bookbinder Wire*
Steel Vests	*Sucker Rods*
Electrical Conduit	*Watch Hands*
Radiator Furniture	*Steel Furniture*
Notebooks	*Highway Markers*
Metal Beds	*Camp Cots*
Bolts and Nuts	*Flexible Shaft*
Metal Lath	*Wood Pipe*
Tin Cans	*Buttons*
Umbrellas	*Sheet Metal Screws*
Steel Barrels	*Rivets*
Washers	*Billboards*
Overall Trimmings	*Razor Blades*
Bird Cages	



Making High Grade Steel-IX

Soft Center Plow Steel Is Product Requiring Unusual Skill in Manufacture—Large Variety of Shapes Is Unnecessary Burden

By John A. Coyle

IN DEALING with agricultural steels, the author will confine his remarks to a discussion of their manufacture for the mechanical tools for turning over the soil to expose its underlying layers to the plant nurturing elements—air and water.

Primitively, the soil was made productive by turning it over for weathering with the earliest form of plow, usually an iron shod wooden wedge fastened to a handle projecting backward and a beam projecting forward, all pulled by men or oxen. Occasional reference to this type of plow is found in the bible.

The Anglo-Saxons made primitive plows, which were followed by the Rotherham plow, which was the first attempt at improvement. Then came the small plow, with wrought iron beams and cast iron moldboard. Later the share and landside were added. A chilling method was adapted so that the breast or moldboard would polish and cause no friction.

Walking, horse drawn or indeed small tractor plows today are fitted with skim-coulter or miniature plow ahead of the plow proper. Steam or large tractor digging plows are equipped with gangs or numbers of plows to accelerate agricultural performance. Revolving disk and rolling coulter plows are of general use, the latter to function in the opening of the furrow and positioning for either crested, rectangular or wide broken furrows, each character of furrow being then ready for turning according to the designed curvature of the share or moldboard.

Plows are right and left handed. The former, or revolving disk fitted plow, is used to turn a furrow, is equipped with disk scraper, and is used largely in multiple furrow plowing and in dry stubble ground.

Soft center steel should crack on its surface into small areas of the hard steel. In other words it should have a craze on its hard surface like that usually found on a piece of overbaked pottery.

Analyses of Plow Steel

An average analysis of crucible soft center plow steel is manganese, 0.30 to 0.40 per cent; silicon, 0.10 to 0.20; maximum phosphorus 0.035: and maximum sulphur, 0.025 per cent.

Open-hearth soft center plow steel averages 0.95 to 1 per cent manganese; 0.10 to 0.20 per cent silicon; 0.07 maximum phosphorus and 0.034 maximum sulphur.

Electrically melted soft center plow steel averages from 0.55 to 0.65 per cent manganese; 0.10 to 0.20 per cent silicon; 0.040 per cent maximum phosphorus and 0.25 maximum sulphur.

Soft center plow steel originally was iron center, hard faced steel, made of hammered, three layer faggots, later semi-cemented soft steel, then progressed to its present mode of production. In all three melting methods the percentage of iron or soft steel in the center ranges from 33 to 40 per cent.

In the crucible process the plate is 2 x 11⅝ inches by mold length, in the open-hearth generally 5 inches thick by width and length of the mold and in the electric melting method, 2½ x 12 inches, weighing 215 pounds. This plate is preferably a universal mill plate of basis open-hearth steel under 0.12 carbon, not over 0.40 manganese and 0.06 silicon, and under 0.035 phosphorus and sulphur. Culled specimens of the plates should be subjected to analysis by careful chemists and a transverse test piece cut from the plate, forved to 1¼ inches square, plunged into a brine bath from a high temperature and then cold around a 1⅛-inch round bar without fracturing. This will insure a proper soft center for the molds, shares, landsides and shovels, and be a safeguard in plowing against break-

age on striking rocks, matted root growth, stumps, etc.

While the fluid metal is being prepared, the soft steel plates are in the acid pickle for removal of dirt and scale. Steam and scrub brushes and a rinsing bath also are employed to help make the surface clean so that the metal will cling to it. The plates then are limed and dusted to preserve dryness and cleanliness and then placed in ingot molds, being set on bottom shims and spaced by side wedges. This permits the fluid hard steel to encircle the soft steel plates.

The cohesion is not a true weld, but a fibrilliferous interweave of the soft plate with the hard steel, so thorough that splitting of the soft from the hard is largely unlikely with such conditioned soft plates of good quality.

Former practice was to roll soft center steel to the gage required and then run the rolled slab back into a fire to relieve strains, often scale and lend to ease of shearing to shape. Now the reheated ingot is taken from the mill furnace, dumped onto the mill fore plate, spread to scale breaking width, edged to break the scale, broadened out to the width required and then rolled back and forth to secure the proper thickness.

High planish of the slab usually indicates cleanliness, making for easy polishing at the plow factory. Other finishing temperature signs emphasize the excellence of faultiness of practice.

After the slabs are rolled, they go to a blanking shear where they are cut to blanks in from two to four multiples of the finished plow shape. Curved knives are used for edge contouring.

The varied character of plow shapes is an important factor, as the odd shapes occasion manufacturing losses. Moreover, many shapes differ from others in such small detail that one wonders why the number could not be greatly reduced by simplification.

After they have been sheared, the plates go to the scales for weighing and for inspection for cleanliness of surface, accuracy to pattern, absence of split steel etc. Then they are stencilled and piled on trucks for loading, and finally shipped and billed. From scale weights and count effort is made to maintain average piece weights; tolerances may be slightly plus in one shipment and minus in another.

The author believes that difficulties in the plow makers processing is never, if hardly ever, the result of slip shod mill performance, but is accidental, as with split steel. He remembers a case in which 300 shares failed because of ignorance. The test given was to support both ends of the hardened shares on end blocking, then drop a 24 pound weight on the center of the hardened shares from a height of 27 inches. Out of the 300 shares so tested only 40 per cent did not break. The author and his associate at the time were convinced the 300 shares had been abused, so instructed that a fresh lot of 300 shares be put through every plow making process. When they came up for test in the manner already described all withstood the test.

How account for the failure of the first 40 per cent? They had been piled, one neatly atop another from a forging heat for cooling over night, and in so stacked, carbonization of the soft plates from the hard steel took place, to the almost total elimination by cementation of the thickness of the soft plate, rendering the share almost a solid mass of hard steel. As the temper of hardened plow shapes is not drawn back, the result is obvious.

Making Soft Center and Solid Plow Steel

THIS is the ninth of a series of articles on the manufacture of high grade steel and the first of two installments dealing with agricultural steels, particularly soft center and solid plow steel.

As in the case of preceding articles in which tool and saw steels were discussed, the author outlines the principal factors affecting manufacture and points to opportunities for economies which could be capitalized through cooperation between maker and user.

South American Iron Ore Largely Undeveloped

(*Continued from Page* 927)

Sabara. Last year the government of Brazil contracted to build a small furnace at Santa Barbara and while the capacity of these furnaces is insignificant, it is only the beginning upon which Brazil hopes to build up a sizable industry.

Up to the present the United States has imported practically no Brazilian iron ore, but in the future, as the domestic ores drop in iron content, the higher grade Brazilian ores will be desirable to mix with the lower grade and more refractory domestic ores.

The iron ore resources of Chile are large, although little is known concerning them except the Tofo deposits in the province of Coquimbo. Iron ores are found throughout the whole length of the country from north to south along the coastal ranges. Magnetite and hematite ores predominate, being either in true fissure veins or metamorphosed ferruginous sediments which have been tilted. In the central provinces there are large deposits of limonite forming the oxidized capping of pyritic ores of iron and copper. Throughout Chile the association of copper minerals with iron ores is common. The principal deposits of iron ore occur in the provinces of Coquimbo, but others are known in Tarapaca, Antofagasta, Alacoma, Aconcogua, Linares, Santiago and other provinces.

The Tofo iron mines in the province of Coquimbo are the only ones in Chile which have been thoroughly exploited and are being worked. These mines were originally opened by a French company in 1910-11, which erected a furnace at Corral. This venture proved unsuccessful and in 1913 the mines were taken over by the Bethlehem-Chile Iron Mines Co., a subsidiary of the Bethlehem Steel Corp. in the United States. This company developed the mines so that they can now ship over 1,000,000 tons annually.

The deposits are about 4½ miles from the coast and 30 miles north of Coquimbo. They form the tops of two hills at an elevation of 2000 feet and the ore consists of hematite with some magnetite which is usually low in phosphorus. There is practically no overburden and the ore is quarried in benches. The ore is crushed and taken to the port of Cruz Grande where it is loaded into vessels for shipment to the United States. This ore can be delivered to ports in the United States for about $6 per ton. Tofo iron ore averages: Iron 67.50 per cent; manganese 0.20; phosphorus 0.011 to 0.50; sulphur 0.01; silica 2.50 and titanic acid 0.8 per cent.

North of the Tofo mines at Juan Soldade and Rameral thick lenses of hematite and magnetite ore occur. The ore is similar to that in the Tofo mines and some is mined at Rameral and shipped to Antofagasta for use in fluxing silver ores. At Pleito and Zapallo lenses of hematite and magnetite occur in porphyritic diorite.

These deposits were sold to the German firm of Krupp in 1921 and it is expected that they will utilize the old plant built by the French at Corral.

The Aguas Buenas iron mines have been worked for fluxing purposes and the ore is high in phosphorus and contains from 55 to 63 per cent of iron. The Dorado deposits of hematite and magnetite, five miles south of Ovalle, contain up to 68 per cent of iron and from 0.015 to 0.334 per cent of phosphorus. The surface is covered by blocks of ore weighing hundreds of tons each and Charles Vattier claims that there are millions of tons of available ore here on the surface and at shallow depths.

Prior to 1914 practically all of the iron ore mined in Chile, and it was less than 50,000 tons annually, was exported to England and France, but since the Bethlehem Steel Corp. has acquired the Tofo mines practically all of the ore comes to the United States via the Panama canal. Up to the present time Chile has not had any iron smelting industry but in 1924 a company was formed in Santiago to build a furnace and steel plant near Valdiva which will have a consumption of about 80,000 tons of iron ore annually.

The iron ore reserves of Chile can be estimated at about 450,000,000 tons, although it is known that with further exploration and development this figure will be much higher. South of Valparaiso near the coast there are deposits of coal at Penco, Coronel, Colica, Lebu and La Union.

An unusual type of iron ore deposits has been discovered in the Donderbary mountains of Dutch Guiana on the property of Guyana Goud Placer Moatschappij, about 56 miles inland. The ore is a lateritic surface deposit which can easily be worked and it is estimated to contain about 100,000,000 tons of which half is rich enough to be exploited under present conditions. Three types of ore have been distinguished by F. W. Voit; poor, containing up to 39 per cent of iron; medium, 40 to 48 per cent in iron; and good, up to 60 per cent in iron. The deposit is about 13 feet thick and the richer ore can be mined alone as it occurs in an area distinct from the poorer grades.

Iron ore is said to be abundant in Paraguay but little has been done to prove this, the inland situation of the country and the absence of communication having retarded the development of its minerals. The development of the iron ore resources of Peru also has been slow owing to lack of transportation facilities.

There is practically no iron industry in Peru and almost no ore has been mined. The imports of iron and steel products are only 12,000 to 15,000 tons annually. The total iron ore reserve of Peru can be conservatively estimated to 564,000,000 tons, but this figure probably will be greatly increased when more information is available.

Deposits of iron ore have been reported from many parts of Uruguay but little information regarding them is available. The largest deposit known is the manganiferous deposit at Zapucay in the department of Rivera which is estimated to contain 80,000,000 tons. This ore will average about 35 per cent of iron, 23 per cent of manganese, 9.0 per cent of silica, 0.05 per cent of sulphur, and 0.03 per cent of phosphorus.

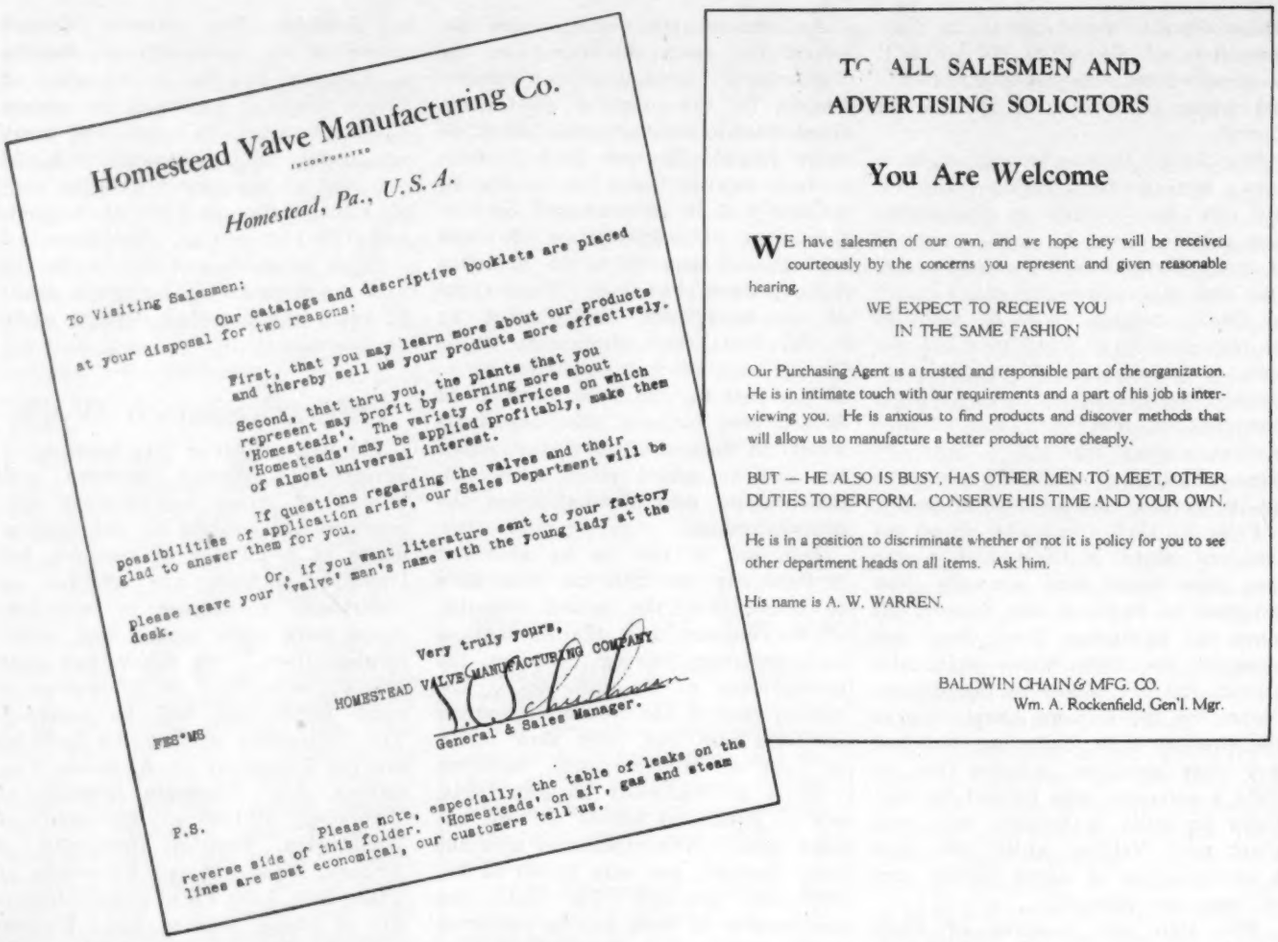
Great interest was shown in the iron ore deposits of Venezuela about 12 years ago but they did not prove up to expectations.

Offers Research Work

Through a series of co-operative agreements effected between the bureau of mines and various universities and colleges for the maintenance of a number of research fellowships, students are afforded an opportunity to engage in investigational work along mining and metallurgical lines. For the college year 1926-27, more than 30 fellowships in eight institutions will be awarded. The institutions offering the facilities are the University of Alabama, Tuscaloosa, Ala.; Carnegie Institute of Technology, Pittsburgh; University of Washington, Seattle; University of Arizona, Tucson, Ariz.; University of Utah, Salt Lake City, Utah; University of Idaho, Moscow, Ida.; University of Missouri, Rolla, Mo.; and University of Nevada, Reno, Nev. Detailed information as to the terms of the different fellowships can be obtained by applying to the engineering and mining schools of these institutions.

Curbing Fire Losses with Sheet Steel

FIRE resisting and combustion slowing properties of sheet steel are described in an article in Making Markets, the monthly magazine of the Sheet Steel Trade Extension committee. "In this country each day, 750,000,000 matches are struck. Each of these lighted matches is a potential fire. In fact, it is a fire. The whole question is how large the fire will become. Of course there are many other potential fires other than lighted matches—the glowing end of a cigaret or cigar, the arc from an opening electric switch, etc., the bulletin states. The length and severity of a fire is dependent upon the amount of combustibles present and the rate of combustion. Comparisons of fire damages to wooden and steel barrels, shelves, and other products are offered. In a test by the National Fire Protection association, a metal can and wooden barrel containing a combustible material were fired. The flame from the barrel mushroomed against a ceiling nine feet high while it was possible to hold a hand safely within 2 feet of the top of the sheet steel can. Similar tests showed that paper packages on steel shelves in a wooden building did not even have the paper burned off while those on wooden shelves would have been consumed, shelves and all.



Homestead Valve Manufacturing Co.
INCORPORATED
Homestead, Pa., U.S.A.

To Visiting Salesmen:

Our catalogs and descriptive booklets are placed at your disposal for two reasons:

First, that you may learn more about our products and thereby sell us your products more effectively.

Second, that thru you, the plants that you represent may profit by learning more about 'Homesteads'. The variety of services on which 'Homesteads' may be applied profitably, make them of almost universal interest.

If questions regarding the valves and their possibilities of application arise, our Sales Department will be glad to answer them for you.

Or, if you want literature sent to your factory please leave your 'valve' man's name with the young lady at the desk.

Very truly yours,
HOMESTEAD VALVE MANUFACTURING COMPANY
F. E. Schuchman
General & Sales Manager.

FES:MS

P.S. Please note, especially, the table of leaks on the reverse side of this folder. 'Homesteads' on air, gas and steam lines are most economical, our customers tell us.

TO ALL SALESMEN AND
ADVERTISING SOLICITORS

You Are Welcome

WE have salesmen of our own, and we hope they will be received courteously by the concerns you represent and given reasonable hearing.

WE EXPECT TO RECEIVE YOU
IN THE SAME FASHION

Our Purchasing Agent is a trusted and responsible part of the organization. He is in intimate touch with our requirements and a part of his job is interviewing you. He is anxious to find products and discover methods that will allow us to manufacture a better product more cheaply.

BUT — HE ALSO IS BUSY, HAS OTHER MEN TO MEET, OTHER DUTIES TO PERFORM. CONSERVE HIS TIME AND YOUR OWN.

He is in a position to discriminate whether or not it is policy for you to see other department heads on all items. Ask him.

His name is A. W. WARREN.

BALDWIN CHAIN & MFG. CO.
Wm. A. Rockenfield, Gen'l. Mgr.

Welcome Salesman; Let Us Help You!

By A. J. Hain

BUILDING goodwill among visiting salesmen has been found to be good policy for many manufacturing companies," said an executive of a large industrial establishment to the writer. "By giving salesmen interviews promptly they win their friendship, even if they do not always give them orders; and they help to eliminate needless waste in the conduct of business affairs by conserving salesmen's time.

"If the time salesmen lose each day in purposeless waiting could be conserved, the gain for everybody would be tremendous. All of us purchase materials or products, and it is just as important that we give visiting salesmen prompt and courteous attention as it is for our own salesmen to receive such treatment. Compliance with this rule would benefit all of us."

This executive called attention to a sign hung up in the office of a large company, which reads as follows:

"It is our aim to see promptly all representatives and salesmen. Brevity on your part will enable us to do this. Sometimes a previous appointment, or matters of importance within our own organization makes unavoidable a slight delay in seeing you."

Another typical "Welcome" sign is reproduced in the abovve illustration. The original is printed on a card 10 x 14 inches, framed, and hung in the office of the Baldwin Chain & Mfg. Co., Worcester, Mass.

This not only makes the salesman feel welcome, but it contains a friendly suggestion to him to conserve the purchaser's time, as well as his own.

Our purchasing agent . . . is anxious to find products and discover methods that will allow us to manufacture a better product more cheaply," the company states. "But, he also is busy, has other men to meet, other duties to perform. Conserve his time and your own. He is in a position to discriminate whether or not it is policy for you to see other department heads on all items. Ask him."

Brand new ideas in selling or purchasing are rare, because so many human characteristics are brought into play so often; but a practical and clever development of an idea is illustrated in the letter addressed by the Homestead Valve Mfg. Co., Homestead, Pa., to its visiting salesmen.

The letter was originated by F. E. Schuchman, the company's general sales manager, and is printed on the first page of a four-page pamphlet. It "sells" the company and its products to the visiting salesmen.

The purpose of the letter and pamphlet is: "First, that you may learn more about our products and thereby sell us your products more effectively. Second, that through you, the plants that you represent may profit by learning more about 'Homesteads'. The variety of services on which 'Homesteads' may be applied profitably, make them of almost universal interest."

There follows an offer to supply more information concerning the company's products, if the visitor or the company he represents is interested.

The letter originated from the fact

the manager learned from experienced salesmen are often required to sit "cooling their heels" while various officials are talking with other people. The time seemed to be wasted by the waiting salesmen; therefore the letter, and the descriptive material. The visitor generally is in an attentive and receptive state of mind; he learns something about the company and its products.

This plan has had considerable success; it has helped to place visitors on friendly terms with the company; it has influenced them in their mode of approach and the subject of their talk; it has made sales for the company. In one instance a salesman studied the pamphlet while he was waiting to sell the company petroleum products, and as a result asked the company's engineer to quote on four-way valves for his own plant.

Another advantage resulting from prompt and courteous welcome of salesmen, intangible but nevertheless important and far-reaching is this: The salesman, who generally is a good talker, "tells the world." "That company is a good company." He is an influence in molding public opinion; an advertisement to be had merely by treating him right.

Nine Tariff Surveys Made in Metal Products

Nine surveys of specific commodities in the metals group were made by the United States tariff commission in 1925, according to the commission's annual report just published. The commodities are woven wire cloth; flexible metal tubing; horseshoes; saddle and harness hardware; jeweler's saws; clockwork mechanisms, meters, tin and aluminum foils and small metal-cutting tools.

An investigation with respect to magnesite in 1925 was concerned with crude and caustic calcined magnesite only, excluding dead burned magnesite and magnesite brick which had been included in the original investigation suspended in 1923. A study was made of all imports at New York, Philadelphia, and Boston since the enactment of the tariff act of 1922, of the distribution of foreign magnesite, and the prices at plant or port of entry as well as at point of delivery. A study was also made of the distribution of domestic and foreign products throughout the chief competitive territory, which extends from the Atlantic to the Mississippi.

The results of the commission's investigation of pig iron were published in the March 18 issue of IRON TRADE REVIEW.

Review of New Books

Directory Shows Many Changes

Iron and Steel Works Directory of the United States and Canada, twentieth edition; published by the American Iron and Steel institute, 40 Rector street, New York; cloth; 493 pages; 5½ x 8½ inches; supplied by the Iron and Steel institute, or IRON TRADE REVIEW, Cleveland, $15 net.

Five years have elapsed since the American Iron and Steel institute published the nineteenth edition of its directory, and therefore numerous changes that have taken place in the industry in this important period are reflected in the new edition. One of the most interesting features afforded by the comparison of the two directories relates to the annual capacities of companies making steel ingots by the various processes, in the United States. The total capacity as listed in the directory issued in 1920 was 55,148,405 gross tons, while the new edition lists companies with total capacity of 59,414,453 tons, a gain of 4,266,048 in five years. In both directories the capacities of a few plants are not stated, but the tonnages involved are not important enough to affect the general comparison. It is to be noted that the theoretical steel ingot capacity as estimated by the Iron and Steel institute committee last January was 56,000,000 tons, and the practical capacity was 50,000,000 tons; while the companies reporting for the directory for 1926 give their total "annual capacity" as nearly 9,500,000 tons in excess of the institute committee's estimate of practical capacity. It is to be noted also that the directory figures show the largest gain in capacity in Illinois and Indiana, as compared with Ohio, Pennsylvania and New York as individual states. The Illinois-Indiana figures for 1926 are 10,968,835 tons, an increase of 1,624,835 in five years. Ohio with a total capacity of 14,380,600 tons shows a gain of 1,488,450 tons. Pennsylvania capacity is given as 22,597,698 tons, an increase of 518,518 tons. New York gained 372,465 tons, with a total for 1926 of 3,050,040 tons, and California shows an increase of 170,300 tons, to a total capacity of 471,800 tons.

Increase in numbers of companies under the various classifications, as well as the effect of mergers, is revealed in this cross section of the industry. The alphabetical list of the companies occupies 412 pages in the new directory, whereas five years ago the number was 402. In his explanatory letter, Howard H. Cook, assistant secretary, says:

"The present edition of the directory includes all companies, firms and individuals engaged in the manufacture of pig iron, steel ingots, steel castings, hot rolled iron and steel products, charcoal blooms and tinplates and terne plates. The facts presented for each company comprise the location of the main business office, capitalization list of officers, list of branch sales offices and sales agents brands and trade marks, list of products, and a description of each of the company's works showing location and plant equipment.

"Additional information concerning plant equipment, incorporated for the first time in the edition of 1916, has been continued in the present edition. The more important of these additions comprise, with regard to blast furnace plants, a statement of blowing capacity, blowing engines and boilers, slag disposal, sintering and nodulizing plants, etc.; in rolling mill descriptions, a more exact description of heating furnaces and rolling equipment.

"Historical connection with the previous edition of the directory has been provided for by the insertion, in the alphabetical list of companies, of notes describing the changes in plant ownership, changes in corporate title and the dismantlement of plants. The length of time since the last revision and the consequent large number of such changes have made these notes very numerous."

Chimneys as Economy

Draft and Capacity of Chimneys, by J. G. Mingle, cloth, 5 x 8 inches, 339 pages, published by Combustion Publishing Co., New York and available from IRON TRADE REVIEW for $3.00 net, and in Europe by Penton Publishing Co., Ltd., Caxton House, London, at 15 shillings, net.

Chimneys form a most vital link in the efficiency chain where any form of fuel is consumed to produce heat or energy. They exercise a direct influence upon the effectiveness and economy of heating, power or melting unit of which they are a part, and until the past few years only meager rules of thumb equations were available upon which to base the details of design and construction.

In this new book, written by J. G. Mingle, a man who has made chimney design and construction his life work, a thorough analysis of the draft and capacity requirements of chimneys is made. While developed upon theoreti-

(*Concluded on Page* 966)

Fell on Skipway, Missing Gas Mains

Top of No. 2 Woodward furnace resting on stock bins. The skipway is crushed and is lying underneath the furnace shell

A close-up view of No. 2 stack showing second row of plates above the mantle where the upper part of the shell sheared. Gas and blast mains on the other side of the stack were untouched, indicating that the shell moved upward and then fell as shown in upper illustration

Shell Toppled After Severe Slip

Investigation of Accident to No. 2 Woodward Blast Furnace Shows Shell Blown Off Above Mantle Following Last of Several Slips—Stock Was Blown Out By Entering Blast

SINCE March 20, when newspapers first reported the accident at Woodward No. 2 blast furnace of the Woodward Iron Co., Woodward, Ala., furnace operators throughout the United States have speculated as to its exact cause. The disaster, which resulted in the loss of 21 men who were instantly burned to death or succumbed shortly after the accident, was reported briefly on page 839 of the March 25 issue of IRON TRADE REVIEW. *Efforts were made at that time to obtain a technical explanation of the accident, but not until now has an accurate description been available. The illustrations on the opposite page and the following account are from an authentic source.*

The evidence shows that during the night while the furnace was in process of being blown out, several slips had taken place, the most violent of which precipitated the accident. The stack actually toppled over onto the skiphoist. The jacket was severed a short distance above the mantle, as clearly shown in the illustrations, and apparently was pushed upwards, as the gas mains were untouched.

Stack Was Completing Successful Run

NO. 2 furnace was completing a successful campaign, during which the furnace had produced a record tonnage, with satisfactory operations characterizing the work of the furnace. The official schedule called for blowing out the furnace on April 1. The last four days of the campaign resulted in the production of an excessive proportion of high sulphur foundry iron, and for this reason the furnace was ordered blown out Friday evening, March 19. The work of blowing out proceeded in the regular orderly manner and without notable incident until 4:45 Saturday morning, March 20, when the furnace slipped, according to the statement of those close to but not immediately around the furnace.

Directly following the slip, the furnace shell was completely blown off, at a point two sheets above the mantle. While it would have been easier for the shell to fall forward into the casting house, or to the free side opposite the dust catcher, it chose the more difficult one of going toward the skipway, which was buckled and bent backward at a point below the center of the incline. The top of the furnace found a resting place upon the stock bins. That the furnace was projected upward is indicated by the undisturbed gas and blast mains which paralleled the stock house under the skipway. The higher of these mains is located at an elevation of about 10 feet above the mantle, notwithstanding which it shows no mark of impact.

With the upper part of the shell removed, the remaining stock in the furnace was blown out by the entering blast and quickly deposited around the furnace, principally within a radius of about 75 feet of the furnace base.

The recording gas gage, attached to the gas washer, which is connected with a gas main leading to No. 2 furnace, showed that during the night several slips occurred, the last of which was the most violent, and, seemingly, developing a pressure sufficient to rend the shell as stated and as shown in the accompanying illustrations.

Inaccurate reports published in newspapers regarding a hot shell are wholly and unqualifiedly untrue. There were no hot spots on the furnace shell. Had this been the case, the furnace would not have sheared as shown in the photograph. There would have been evidence of overheating and buckling, neither of which was indicated. Moreover, under such conditions, there would have been warning of impending danger, in which event the blast could have been taken off and the workmen could have reached safety zones.

Aside from the destruction of the furnace shell and skipway, the property damage was surprisingly small. It is probable that the furnace will be idle four weeks longer than ordinarily required to effect the usual relining and general repairs.

Selling Much Machinery to Great Britain

Industrial machinery imported into the United Kingdom in 1925 amounted to nearly $43,000,000, and of this total the United States furnished probably more than one-third, the rate which has prevailed during recent years. This volume of machinery imports was more than double the value absorbed in 1913, although the tonnage represented only 88 per cent of the prewar trade. According to the industrial machinery division of the department of commerce, Washington, it is for this reason that the United Kingdom is one of the most important markets for American machinery, but inasmuch as British machinery is perhaps the most serious competitor in other foreign markets, the absorption of so important a volume by the British is a testimonial of the high quality of American-made equipment.

Furthermore, it is somewhat surprising that American participation in the British machinery trade has been so large during recent years, as Continental manufacturers have enjoyed the advantage of a declining exchange value for their currency.

The price per ton of British machine tool imports in 1925 was £154 and £165 in 1924, as compared with a prewar value of £97. Correspondingly, the value per ton of British exports in 1925 was £109 and £114 in 1924, against the prewar value of £61. It should not be assumed that these ratios represent only the increased cost of producing machinery, for it is undoubtedly true that the machinery imported and exported during recent years is of the superior type to that sold before the war, and that the increase in value per ton represents not only the decreased purchasing power of British currency, but also the advancement that has taken place in these branches of engineering during the past decade.

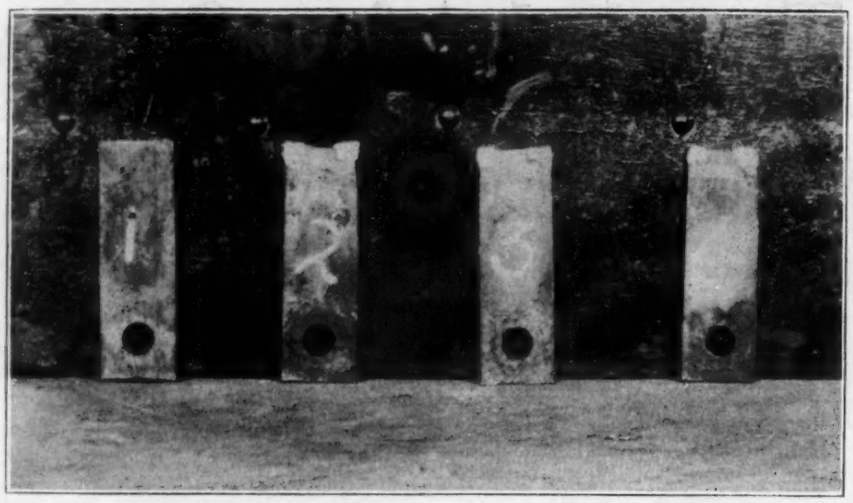


Fig. 6 — Hammers which are used on a swing hammer mill for pulverizing dried raisins in the manufacture of alcohol. No. 1 shows a new steel hammer. After its corners have worn away, it is coated with stellite as shown in No. 2. The hammer in No. 3 is ground to size. No. 4 shows a built-up hammer after a run of 94 hours per corner, with scarcely no signs of wear noticeable. Steel hammers last only 12 hours per corner while those protected with stellite continue running from 81 to 192 hours. The average increase is 6 to 1 over steel

Applies Stellite by Blowtorch

Deposition of Wear Resisting Alloy Is Accomplished Quickly and Economically with Acetylene—Technique of Operation Is Described—Industrial Uses Are Varied and Wide

IN DEPOSITING stellite to steel or on other metal by means of the oxyacetylene blowtorch, a reducing flame should be used. The flare, or outer cone, denoting an excess of acetylene should extend double the length of the inner cone. It will be found that the inner cone lengthens out slightly and becomes less perceptible as the acetylene in the flame is increased but the proper proportions of the inner to the outer cone may be determined with a little practice. Where too little oxyacetylene is used, the puddle will foam and bubble, forming blowholes, caused by the oxidation or burning of some of the constituents of the stellite. If too much acetylene is used on the other hand, it will be evidenced by an excessive coating of the carbon surrounding the puddle. This flame furthermore will reduce the speed of welding but is preferable to the flame containing insufficient acetylene.

Where the surface to be built up is of small area, it may be entirely tinned at one time. The flame should be played on a small area in one corner of the piece until its temperature is elevated to a point where the

Applications Suggested

BECAUSE of its extreme hardness and consequent resistance to abrasion, stellite, a nonferrous alloy containing 4 per cent cobalt, 30 per cent chromium, 20 per cent tungsten and 5 per cent of other metals, is used extensively in the manufacture of cutting tools, die blocks and machine parts. As the unusual hardness prevents machining, the material usually is cast in small sections and attached to the steel tool or die by brazing or electric arc welding, after which it is ground to final shape. IRON TRADE REVIEW *in its issue of April 1 presented an article describing a new use for stellite—that of depositing it on steel or other metal surfaces by means of the oxyacetylene blow torch. This development greatly extends the use of the alloy and makes it possible to reclaim worn out parts by rebuilding the stellite areas. This article, which is the conclusion of the first, further describes the technique of the blow torch process and suggests briefly numerous applications for industrial use.*

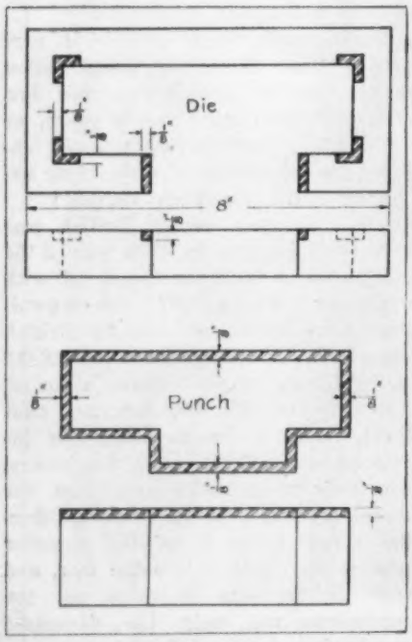


FIG. 7—THIS HOT TRIMMING DIE AND PUNCH FOR RAILROAD ANCHORS WAS REINFORCED WITH STELLITE AND ITS LIFE INCREASED FIVE TIMES

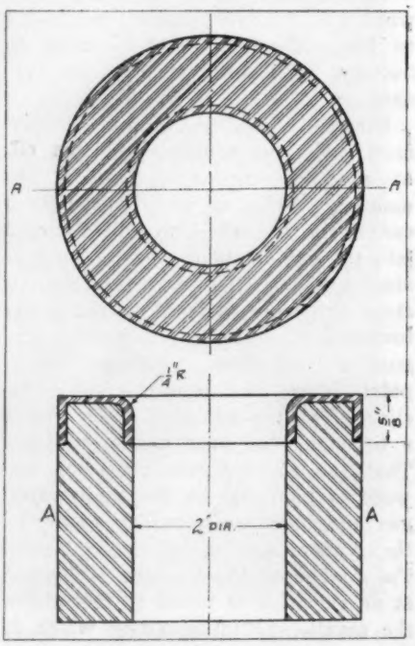


FIG. 8—THE DEPOSITION OF STELLITE ON THIS COLD SHEAR AND DRAWING DIE FOR SHEET METAL INCREASED LIFE FIVE FOLD

carbon coating deposited by the reducing flame disappears and the base metal begins to sweat. The rod should be brought to its fusion point at the same time by immersion in the blowpipe flame and a drop of the stellite should be allowed to drop on and fuse with the sweating base metal. If the stellite gathers in a ball, as happens when a drop of water is placed on an oily surface, it indicates that the parent metal has not been brought up to the proper temperature.

If properly applied, the stellite should then flow on and fuse steadily with the parent metal. In tinning the remaining surface the blowpipe flame should be kept ahead of the melted pool in order to bring the parent metal up to the proper fusion temperature as the work progresses. The rod should be kept in the molten puddle but should be agitated as little as possible and prevented from digging into the parent metal. It is of importance if any scale or dirt is present that the parent metal be brought to the fusion point before the stellite is run into it. If this is done, the stellite will run under the scale or other impurities and float them to the surface. If the metal surrounding the impurities has not been brought to the molten state, however, the stellite will not float the scale and in covering it will form a blowhole at this point.

Impurities Are Floated Out

Removal of scale is similar to the removal of sand in cast iron welding, the flame being played on the surrounding metal until the impurity is floated in it. An effort should be made in this operation, however, to melt as thinly into the parent metal as possible to minimize the thickness of the layer in which some of the parent metal has been alloyed with stellite. Where the section to be covered is of such an area that the operations of tinning and building up cannot be accomplished without a rest interval being taken by the operator, only that portion should be tinned which can be built up to the required height before the rest period.

If the design of the piece is of such a nature that it is inaccessible for grinding, a good grade of brazing flux may be used to help float the scale before tinning the surface. Flux should be used sparingly and only where necessary. In tinning cast iron, more of the parent metal will have to be fused because of its more porous structure and characteristic action when subjected to the blowpipe flame. Tinning cast iron differs from tinning steel, therefore, in somewhat the same manner that welding differs from brazing.

After the surface has been tinned and thorough fusion and elimination of blowholes accomplished it may be built up to the required dimensions. The building up operation from this point consists of adding stellite to stellite and is therefore comparatively simple provided the proper procedure has been followed in tinning. One corner of the tinned surface should be brought up to its fusion point, which will be noted by its oily appearance and the filler rod added as in the tinning operation. Care should be exercised to confine the limits of

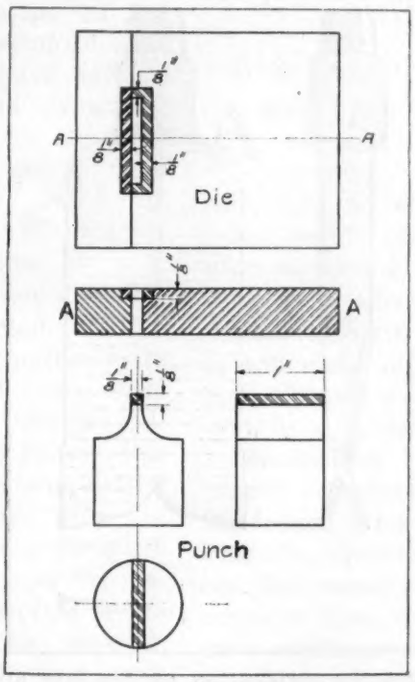


FIG. 9—A SMALL AMOUNT OF STELLITE COATED ON THIS PUNCH AND DIE FOR COLD PUNCHING SHEET METAL DOUBLED THE LIFE OF THE TOOL

the puddle to the enveloping blowpipe cone to prevent oxidation. In building up cast iron, on account of the intermingling of the two metals during the tinning operation, it is necessary to add a heavy top layer of stellite to make sure that the surface be pure metal.

Built up surfaces cannot be bent or hammered back into shape when warpage of the piece occurs. For this reason, when the work would have a tendency to warp, it should be built up in one operation, the tinning and building up should be done in sections in such a manner as to compensate for this effect.

It should be remembered in this connection that whenever building up is done in sectional blocks, the sides to which another block is to be fused should be left with a rounded edge, so that proper fusion with the parent metal and built up block may be made at this point. Stellite is nearly as fluid as cast iron and where it is necessary to build up a square corner the same general practice should be followed as in cast iron welding. This may be done by reducing the size of the blowpipe head or flame and building up a bead of metal over the rounded corner. By grinding down this surface, a square corner may be obtained.

In building up a large area it is advisable to build it up in sectional blocks rather than attempt the entire area in one operation. As previously mentioned, each section should be tapered along the line of junction with another section so that the proper fusion may be obtained.

Following completion of the coating operation, the piece should be reheated until an even temperature is secured throughout. It should then be cooled slowly and evenly in some form of an annealing bin or furnace. Where the piece has been worked upon in a temporary firebrick furnace, this may be accomplished by adding sufficient charcoal to obtain the desired reheating effect. All openings in the furnace should then be covered with asbestos paper and the piece allowed to remain in the furnace until it has cooled completely.

If the piece was removed from a permanent preheating furnace during welding, it should be returned to the furnace until the required reheating has been obtained. It should then be placed and covered up in a specially constructed annealing bin. It is essential that a slow and even cooling be obtained, for although the co-efficient of linear expansion of steel and stellite are about the same, the specific heat of the latter, is considerably lower than that of steel.

Inspection Work For Quality

The person in charge of inspection should be responsible for the quality of the work. He should see that the pieces are properly prepared and preheated and that the recommended technique is carried out. Where inspection after grinding reveals blowholes or cracks in the finished piece, they should be eliminated in the following manner. The piece should first be brought to the proper preheating temperature. Where blowholes exist, the stellite should be melted around the blowhole until the scale or other impurity causing it has been floated to the surface. Where checks are evidenced, the stellite should be melted down until the fine white line which shows up under the heat from the

blowpipe has been eliminated. The metal may then be allowed to run together and any necessary stellite added to bring the surface up to its required height.

The applications for this process are extensive. One of the important uses is for hot or cold dies, bending, shearing, forming, blanking, stamping, drawing and trimming. The resistance of stellite to abrasion renders it extremely suitable for this work. Previously only the simplest dies could be made from the material because it could not be machined except by grinding. Moreover, dies of solid stellite could be used only for light work because castings lack the strength essential for heavy work.

Deposition of stellite makes possible surfacing only the parts where wear occurs. The steel or cast iron provides a strong backing for the stellite. In addition, the process permits indefinite use of the die for it can be recoated after the first coated surface has worn down. When the die is used for hot work, the coated surface retains its hardness and permits working at temperatures which would soften any ordinary steel die. Because they must be made carefully from high grade steel, dies are expensive tools and the hardening engenders risk of warpage and breakage. Improper hardening causes nonuniform quality. Thus, lengthening their terms of service by salvaging effects considerable saving.

Machinery Life So Lengthened

Machinery for many purposes contains moving parts which are subject to extreme abrasion. In many cases, these parts wear out several times during the life of the machine, causing frequent shut downs for replacement. Usually no change in design is possible because the friction part is necessary to the functioning of the machine. Covering these parts with stellite will lengthen their life and reduce replacement costs considerably. Cams, fingers, trips and gears are a few of the parts which may be built up and maintained in condition by the use of deposited stellite.

The adoption of stellite drilling tools in the oil fields is the outgrowth of its use as a cutting tool in the machine shops. The ideal bit is one which is tough enough to stand the excessive strains encountered in service and at the same time is hard enough to hold a cutting edge for a long period af time. It is almost impossible to temper a steel bit to meet these conditions, while a bit which is made of steel with built up cutting edges of stellite, satisfies the conditions. The hardness is supplied by the stellite and the strength by the steel shank.

In the manufacture of nuts and bolts, automatic machinery is employed and the cams are subject to considerable wear. Surfaces of this kind have been coated with stellite and found to last many times longer than the parts previously used. All cams which are readily ground can be made to give a greatly increased life by this method. Surfacing of bushings has been undertaken and preliminary tests have shown that the same increase in life can be obtained as

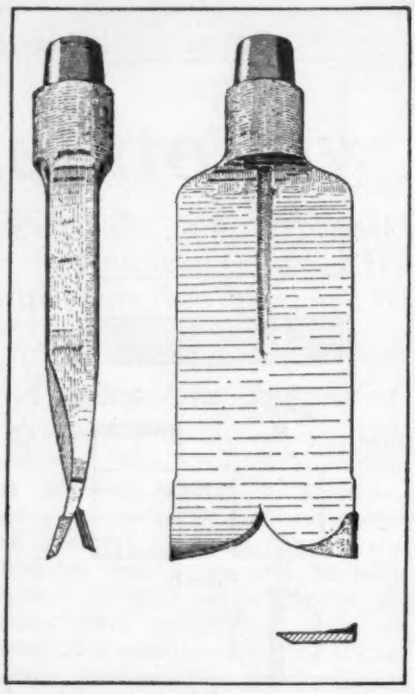


FIG. 10—APPLICATION OF STELLITE TO FISH TAIL OIL WELL BITS. BIT WEAR DETERMINES THE SHAPE OF THE DEPOSIT

is found in other similar applications. In the rolling of steel many parts are subjected to intense heat and abrasion, and here the use of stellite has been valuable in increasing the life of these parts. Roll wobblers, roll guides, wear plates and rough bearings are typical applications. Although but a few of the many uses of deposited stellite have been enumerated, they will serve to illustrate what may be accomplished through its use in lengthening the service of machinery and tools.

Large Uses of Steel—Metal Strapping

(*Concluded from Page* 928)

A prepared round wire for reinforcing purposes came into use during the early stages of the World war. A machine was developed that automatically tied the wire, a quicker process than then prevailed in nailing the straps. Production of this material jumped from nothing in 1914 to about 15,000 tons in 1918. Since it has dropped off to around 7000 to 8000 tons, but is still an important factor, especially in the handling of the smaller packages. The wire is galvanized, of 13 gage.

During the war a machine was developed for fastening or sealing the ends of flat wire, the joints having a tensile strength equivalent to 85 per cent of that of the band. This device did much to broaden the application of metal bands. Many commodities, where nails cannot be used, are now tied with metal strips, including rubber tires, hardwood flooring, paper, ready-cut building material and various other items.

Metal shingle bands came into use in 1902. These are of plain galvanized sheet metal, 12 inches long, ½-inch wide and 29 gage. Machines have been developed which will turn these out at the rate of 750 per minute. Between 1100 and 1200 tons are consumed annually in the United States and Canada.

Corrugated metal pieces for forming tight invisible joints in wood without the use of glue or other materials were first produced at Williamsport, Pa. Plain edges at first, they now have saw tooth edges, which makes them easier to drive and does not break down the fiber of the wood to such an extent. For years they were used almost exclusively in cabinet work, but later their use was extended to packing boxes, where a considerable saving was effected.

Corrugated metal is sold in coils, the consumer, by aid of a device cutting it into desired lengths and driving the pieces into the wood, all in one operation. The material is cold-rolled strip steel, 25 gage, and comes in widths ranging from ¼ to one inch. Four continuous operations, all done on one machine, enter into the production of corrugated strip, the corrugating, notching, sharpening and reeling. It is sold in five to 15-pound reels, depending upon the width.

While the use of paper cartons has cut into demand for the larger sizes of metal strip, it, nevertheless, has created an outlet for small coppered wire, 25 gage, ⅛-inch wide. A machine has been developed whereby the consumer is able to use this wire for stitching the cartons. As previously noted, about 500 tons of this flat coppered wire is used annually. Round wire is used for stitching wooden orange boxes.

Editorials

Coal Economics Viewed Differently

POINTS of difference rather than of resemblance are more noticeable in the recently published report of the Royal Commission on the British coal industry for 1925 and the John Hays Hammond report on the American industry submitted several years ago and are a subject of more or less academic congressional comment.

The British commission summarily rejects the trade union scheme of "nationalization" of the coal mines but suggests state ownership of mineral rights. The American commission saw no necessity for any sort of government ownership. The British body recommends a wage reduction of about 10 per cent to bridge the gap between mine production costs and sales prices. The American commission talked all around the subject but made no specific recommendations.

Power, heat and light schemes through ultilization of coal at pithead and widespread distribution for manufacturing and domestic purposes are proposed by the British commission. Secretary Hoover's "super-power" scheme has been promulgated along similar lines. In Great Britain this would not be difficult since no important district is farther than 100 miles from a mine.

Railroad carrying rates do not come in for much discussion in the British report because the distances from mine to point of consumption or exporting port are not great. In America, however, they mark the difference between life and death to some mining districts.

Merchant Iron Production Falls

ONE interesting fact revealed by the 1925 pig iron production statistics, is that although total output gained 16.86 per cent, merchant iron increased only 6.9 per cent while nonmerchant iron went up 20.5 per cent. It will be recalled steel production last year was the highest in history, gaining approximately 19.4 per cent over 1924. Steelmaking grades of pig iron followed closely the increase in steel, basic iron gaining 22.93 and bessemer 15.26 per cent.

Foundry, malleable and forge iron make up the bulk of merchant pig iron as that made for sale. Foundry dropped 3.79 per cent and forge 5.98 per cent. Malleable iron, however, showed the remarkable increase of 59.65 per cent. It is not to be implied that this gain reflects an increase of like amount in malleable castings since the output of castings in 1925 showed no such expansion. Rather may much of it be attributed to the increased use of this grade in mixing with foundry iron for gray iron castings.

In 1925, the production of basic iron and malleable iron were the second highest in history, closely following 1923. Forge iron, however, still is declining and showed the third lowest output in recent years. In 1925, merchant iron represented 24.5 per cent of the total output, against 26.8 per cent in 1924 and 26.1 per cent in 1923.

Arbitration Solving Disagreement

ARBITRATION as a factor in business management is becoming more and more important. To many the word implies disputes between labor and capital over wage scales, union regulations, etc. But through intelligent effort industrial arbitration has reached such scope as to affect the largest corporations.

Massachusetts leads in enacting such legislation as will make more effective commercial arbitration. Chambers of commerce at Boston and Cleveland have inaugurated arbitration machinery.

Considerable emphasis is added to the community and state effort to develop arbitration by the federal arbitration law, effective Jan. 1, 1926. This law, prepared by a committee of the American Bar association and approved by that body, provides that when a contract involving interstate commerce or maritime transactions contains a written provision for arbitration, the provision shall be "valid, enforceable and irrevocable," except upon the grounds for which any contract may be revoked; and, that the federal courts shall enforce such agreements whenever, under the judicial code, they would normally have jurisdiction of a controversy between the parties. They may vacate, modify or correct an award for cause.

Economy of time and expense in settling disputes by arbitration instead of litigation should prove of interest to American manufacturers as another opportunity to minimize the costs of doing business.

Metal Profits Are Unbalanced

NONFERROUS metal mining companies in the past year enjoyed one of the most prosperous periods in their history. Production and sales, as previously published, have been known to be at or near record size in each of the products coming within this group. The *Engineering and Mining Journal-Press* says it

is an extraordinary fact that "ten leading producers of lead ore in North America, without exception, established new high records as to net earnings for their entire history." Not many statements have been published from the zinc industry but it is known that most zinc mines made good profits, while smelters probably made somewhat less than the mines. Most of the copper producers that have reported, made handsome profits, though some of the producers are known to be making little money. Tin mining in the Orient was highly profitable.

But when it comes to the manufacturing branches of these industries, the showing was not so glowing. Many brass foundries made little profit, so it is said in the trade, though official statements in the industry seldom are published. Brass ingot smelters complain that they have made practically no money for several years and this is known to be an incentive in their new study of costs. Brass and copper rolling mills did a tremendous business but their competition was close and there is much complaint that though profits were better than in the previous year, they still were too narrow.

Pig Iron Market Steady

THE situation in the pig iron market today is the reverse of what it was at the beginning of the first quarter; but melters have not changed their method of purchasing solely because of adequate transportation facilities. Three months ago blast furnaces had large order books because many buyers covered their requirements with contracts extending over the entire first quarter. The coal strike, uncertainties attending deliveries in the winter time, and the possibilities of an advance in prices were the chief influences that led them to buy. Today the factors that go to make up a buying movement are lacking, and therefore business for the second quarter is developing more slowly and orderly for the furnaces.

Pig iron prices today are practically the same as they were three months ago. Iron ore prices have been reaffirmed at last year's level. Coke is lower than it was three months ago. A dozen furnaces have come into blast in the past month. The question of why there is no buying movement for the second quarter almost answers itself. Two circumstances might lead to one; impending price advance or difficulties in obtaining shipments promptly. At present neither one of these appears in the picture.

Stocks of pig iron at blast furnaces are lower than they were three months ago; at foundries there are practically no stocks. Some foundries are hardly a carload of iron ahead of their requirements. While transportation is good foundries naturally are disposed to let furnaces carry the stocks. If something occurred to interrupt the free flow of iron from furnaces to foundries melters might change their views as this policy; but can they see any such setback in the near future? Can they see any immediate prospect of a price advance?

Perhaps too much emphasis is placed on a buying movement as a gage of business. As demand is right up on supply, it is easier to sell at present prices of pig iron than if there was a rush of inquiries to cover the entire quarter. Shipments count, and as long as shipments continue on a high level as they are today, and a reasonable amount of forward business is placed, what cause for complaint is there in the fact that we are not in the midst of an old-fashioned buying movement?

What Our Readers Are Thinking

Oppose Metric System Bill

A FEW weeks ago a bill now before congress, proposing to extend the use of metric weights and measures in merchandising was reprinted in the *Bulletin* with the statement that Senator Burton had asked the Cleveland Engineering society for its opinion on it.

The bill was subsequently referred to our standardization committee who voted adversely on it. The reasons for their stand they outlined somewhat as follows:

1. We do not favor the passage of any law unless it is clearly shown that it is needed.
2. The proposed law grants to a government bureau altogether too much power.
3. The department of commerce would have to be greatly enlarged to hear and rule on the large number of applications that would be received for permission to use units other than the metric, under the provision of the bill.
4. Every revenue collecting agency in the federal government would have to be enlarged to do the translating into the new units. Every city and state government would also have to amend many of its laws and ordinances so as not to conflict with the terms of the proposed law.
5. Practically no important manufacturers of machinery, tools and equipment, although conversant with the metric system through foreign trade, have adopted the system for domestic purposes and have shown no intention to do so unless compelled by law, on account of great expense involved with practically no advantage to be gained.
6. Whereas one of the chief talking points for metric units is the fact that it is a decimal system, our present system of units is also commonly used as a decimal system. Manufacturers, for instance, generally use decimals rather than fractions of an inch and surveyors use decimals of a foot instead of inches or fractions of a foot.

The executive board of the Engineering society unanimously approved the report of its standardization committee.—*From the Bulletin of the Cleveland Engineering society.*

The Reader's Page

Vol. LXXVIII, No. 14 IRON TRADE REVIEW April 8, 1926

Minerals To Decide Fate of Nations

WITH an iron ore reserve estimated at nine billion tons, 15 per cent of the world's total, South America is producing slightly more than one million tons annually, about 1 per cent of all the iron ore mined. South America has the largest reserve of high-grade ore of any of the continents, but the lack of coal suitable for making coke is a serious handicap to the making of iron and steel in that country. It imports most of its iron and steel supplies; a country with double the area of the United States, but with only half as large a population. The article by Olin R. Kuhn in this issue of IRON TRADE REVIEW is worth reading because it draws a broad, economic picture of South America, while dealing mainly with iron ore and coal. Some day, he concludes, South America will be one of the world's largest exporters and consumers of iron ore.

A Southern Treasure Chest of Iron Ore. Page 925.

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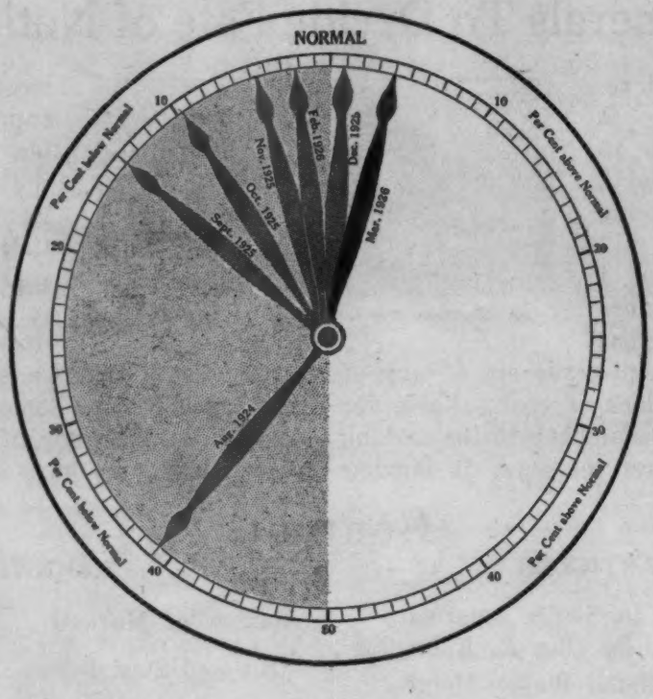
The Business Trend

Blast Furnace

The Dial represents the Blast Furnace Index of Business which is based upon a 40-year record of furnace activity. It is a barometer of general trade.



Business Dial

When 60 per cent of all the country's furnaces are in blast business conditions are normal. The Index is now higher than the normal point on the dial.

Business Level Remains High

By JOHN W. HILL, Financial Editor

GENERAL industrial activities as measured by the Blast Furnace Business Dial were shown to be above normal in March. At the close of the month 235 furnaces were active, a gain of 12 during March. This was 62.4 per cent of the total number of 377 furnaces available for use, against 58.5 per cent in February and a theoretical normal of 60 per cent.

BY VIRTUE of the gain in March the Blast Furnace Business Dial now stands 4 per cent above normal. One year ago it stood exactly on the normal line having receded during the month of March. The present tendency of the index continues to be upward.

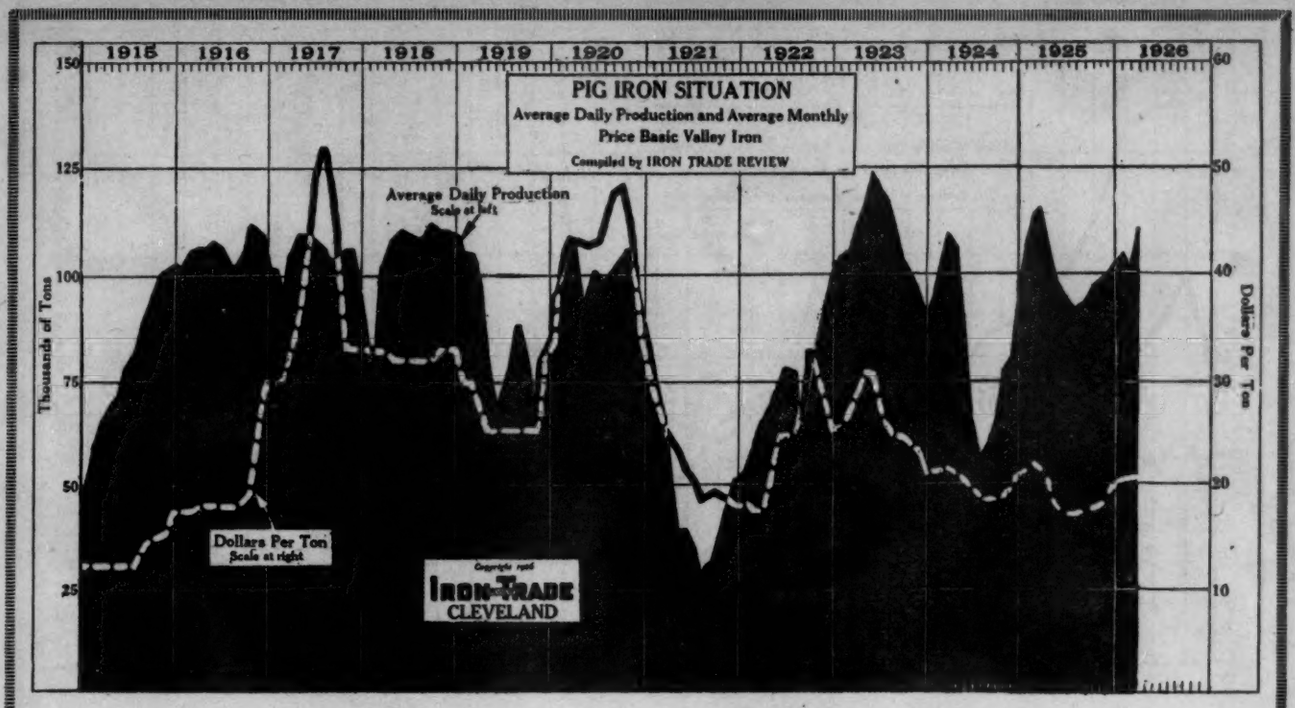
THIS fact is impressing itself upon general sentiment. It is displacing the recently pervading pessimistic view of the outlook for business, borrowed from the stock market. As fundamental business conditions are more calmly surveyed the conviction is growing that no precipitated decline similar to that of stocks is ahead for business.

THIS consideration is even invading Wall Street which usually contends that the stock market is an unfailing barometer of business. But now it is realized that the stock market by its unprecedented speculative advance of 1925, gave a wildly exaggerated forecast of the actually modest increase in business profits. The severity of its decline this year, probably is just as far wrong as a prophecy of trade adversity.

TWO important considerations support this belief. One is that prices of commodities have not been inflated. They are now about 3 per cent lower than their level of one year ago. The other consideration is that inventories of goods in the main have not accumulated.

CAUTION prevails throughout most lines of industry and sellers are kept anxious by the lack of large future buying. But meanwhile current business, as shown by blast furnace activities, unrivaled freight traffic at this time of the year and by other signs, is nothing less than good. There have been no indications as yet of any sharp immediate falling off in activities.

The Business Trend

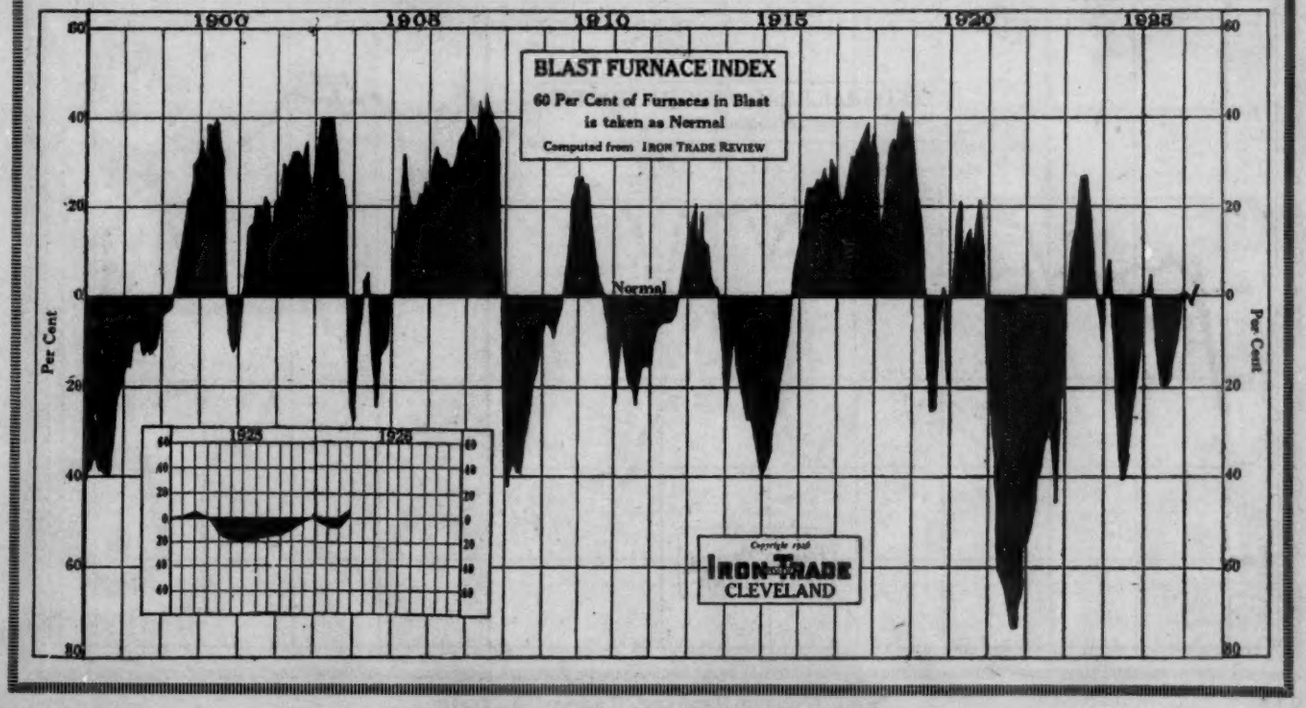

PIG IRON SITUATION
Average Daily Production and Average Monthly Price Basic Valley Iron
Compiled by IRON TRADE REVIEW
Average Daily Production Scale at left
Dollars Per Ton Scale at right
Thousands of Tons
Dollars Per Ton
1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926
IRON TRADE CLEVELAND

Pig Iron Situation

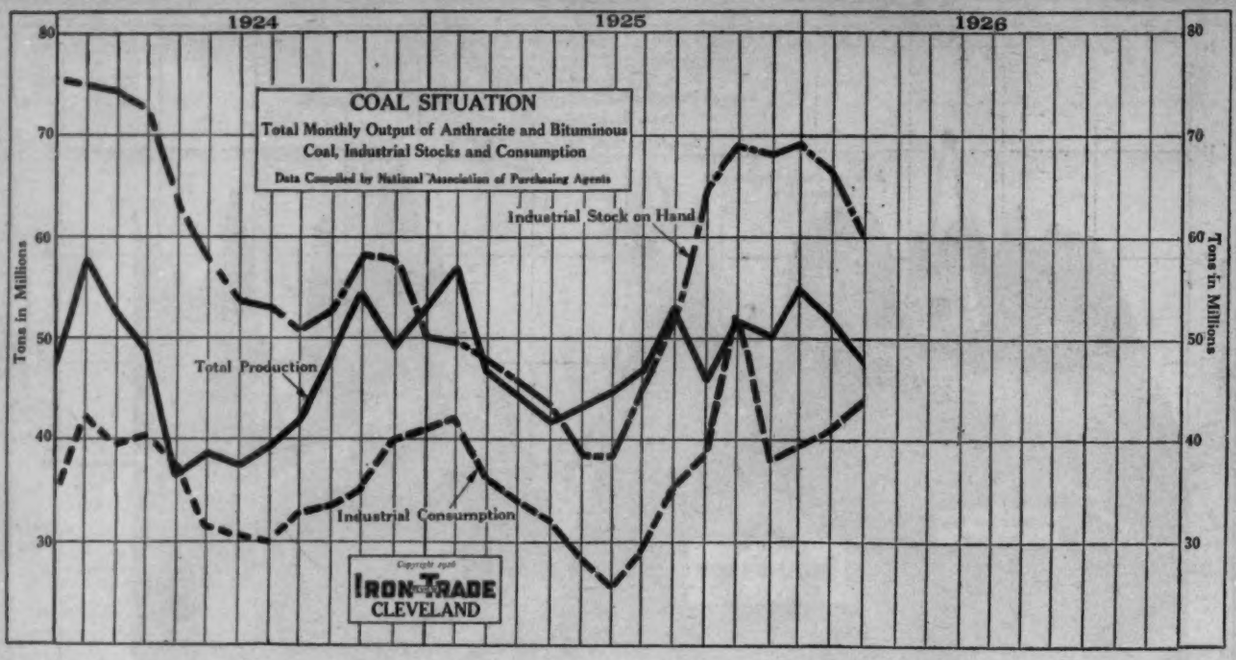
PIG iron production in March rose to a daily average of 110,823 tons. This was the highest rate reached for any month since March one year ago, when the daily average was 115,207 tons. Compared with February, when the daily average output was 104,423 tons there was a gain of 5 per cent. The total pig iron made in March amounted to 3,435,525 tons an increase of 511,000 tons over the February record. Pig iron prices remain fairly stable, with basic valley iron quoted at $20 a ton.

Blast Furnace Index

AT THE close of March there were 235 blast furnaces in operation. This was a gain of 12 over the 223 active one month before. The total number of furnaces available for use is 377, a drop of five, from the month before. The percentage of all furnaces in blast at the close of March was 62.4 per cent, compared with 60 per cent one year ago and with a theoretical normal of 60 per cent. This means that the blast furnace index is now 4 per cent above normal, denoting a high level of business.


BLAST FURNACE INDEX
60 Per Cent of Furnaces in Blast is taken as Normal
Computed from IRON TRADE REVIEW
Normal
Per Cent
1900 1905 1910 1915 1920 1925
1925 1926
IRON TRADE CLEVELAND

The Business Trend

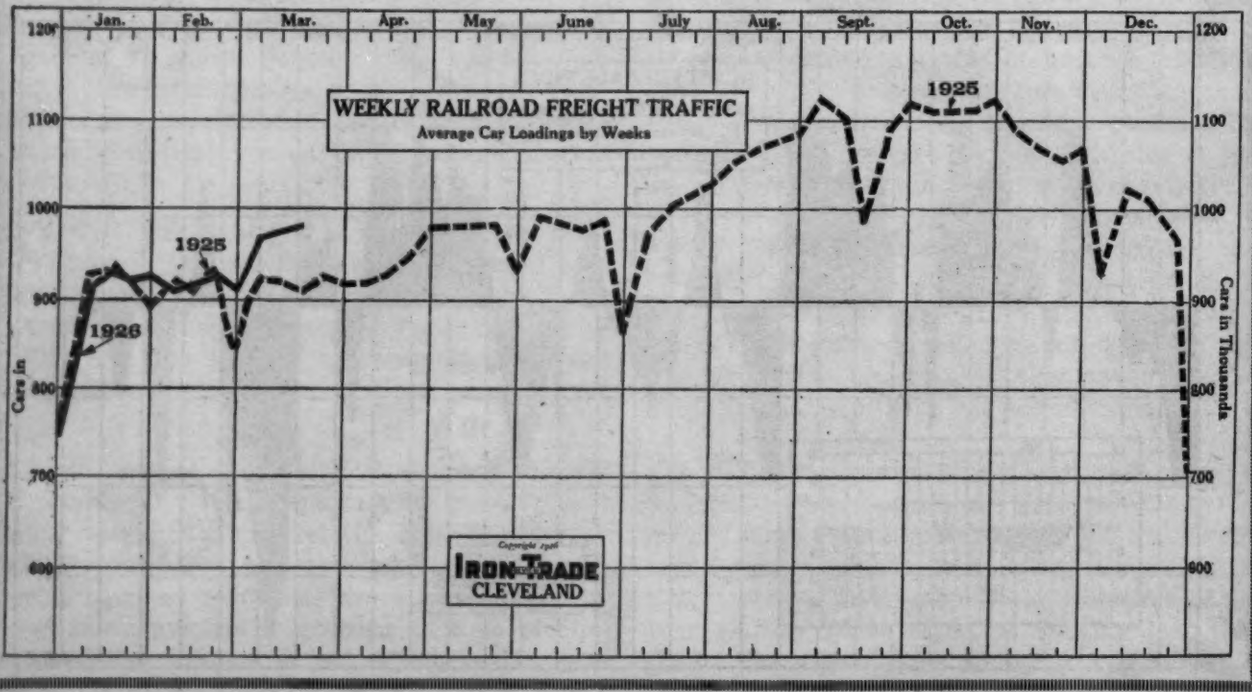


Coal Situation

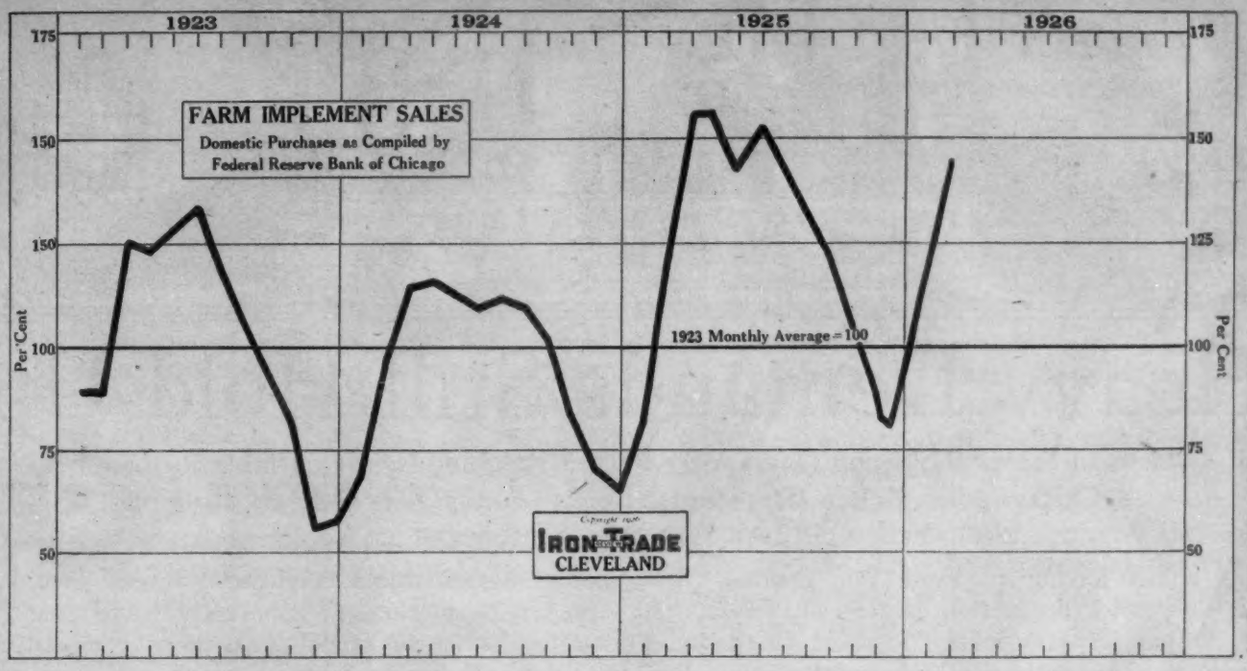
GENERAL business as reflected in the industrial consumption of coal has been holding at a high rate of activities. According to the estimate of the National Association of Purchasing Agents, industries in February consumed 43,747,000 tons of coal. This was a sharp gain over January. Meanwhile production of coal declined and stocks which were 66,000,190 tons on Feb. 1, dropped to 60,000,014 tons on March 1, in a more healthy situation with larger industrial activities.

Weekly Freight Traffic

CAR loadings on American railroads are reflecting the greatest distribution of goods for any year in history at this season. For the week ending March 20, loadings totaled 977,000 cars against 967,000 the preceding week and 911,000 in the week of March 21, 1925. Since the first of the year 11,017,760 cars have been loaded against 10,849,000 cars at the same period 1925 the previous peak. The gain over last year was 1.5 per cent. While the increase over 1924 is even greater.



The Business Trend

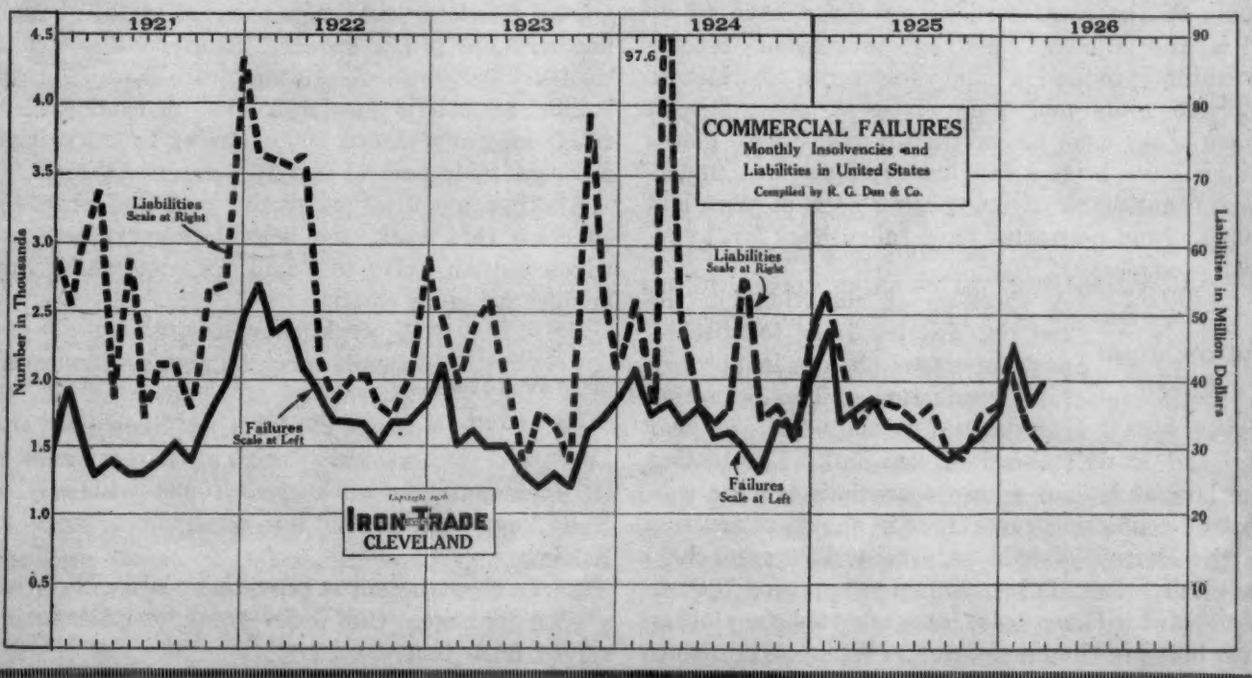


Farm Implement Sales

DOMESTIC sales of farm implements have made a flying start into 1926. As computed by the Federal Reserve Bank of Chicago, sales in February were at an index of 147.4. This compares with 117 in January and with 120 in February 1925. For the first two months of this year the index of sales of implements stood at an average of 132 compared with the monthly average of 102 for the first two months of 1925. Better buying power on the part of the farmer is indicated.

Commercial Failures

COMMERCIAL failures in March showed a normal increase of about 10 per cent over those for the short month of February. During the month there were 1984 defaults against 1801 in February and 1859 in March 1925. The increase over the number for one year ago is a little less than 7 per cent. Liabilities totaled $30,623,000 in March. This was 10 per cent less than for both February this year and March 1925 and it was the smallest total of liabilities for any March since 1920.



Heavy Demands Still Hold Up

Signs of Material Slowing Down After Record-Breaking First Quarter Are Absent —Chicago Mills Retain Large Order Books—Automobile Industry Running Well—Valley Pig Iron Weakens—Sentiment Less Confident

AFTER having achieved the greatest first quarter production of steel on record, the industry is looking forward to the next three months with modified expectations. Producers are not allowing themselves to believe that the present flood-tide movement of tonnage can be prolonged indefinitely. For the parallel to run true with 1925 and 1924 the crest of early year demand already should have been passed. Such is not the case, however, for the situation is yet to develop trustworthy facts or symptoms that either demand or consumption has entered the stage of material contraction.

Against a slowing down of the sheet market, believed to have been contributed in part by weather conditions, a break of pig iron in the valleys and some display of less favorable sentiment, there are various offsetting examples of undiminished vitality in underlying conditions. Some of the most striking of these have to do with the Chicago district. Following record-breaking production and shipments in March, Chicago mills find themselves at present with order books even larger than a month ago. Plates which have been a lagging product have undergone a noticeable strengthening both in price and tonnage and deliveries have fallen back with several producers.

Auto Output Large

A check-up of conditions in the Detroit district fails to disclose any important change in automobile production. The situation compares favorably with a year ago and is well ahead of last fall. Eliminating the largest builder whose operations are the subject of conflicting reports, it is shown production in the Detroit district at present is around 9000 cars daily. Last fall a smaller poll showed 7000 to 7500 cars. Fewer cars are reported in storage with builders than a year ago. While certain companies have reduced operations, others have increased, these changes apparently largely representing shifts of trade under keen competitive conditions. Some companies which have accumulated liberal stocks of parts are holding up new orders and concentrating on finishing the material on hand.

Iron Prices Break

After holding steady for five months, the valley and Pittsburgh pig iron market, largely, through the aggression of one producer, has broken abruptly this week $1 to $1.50 a ton. Foundry and malleable have been sold down to $19 valley, basic to $18.50 and bessemer to $19.50. This decline follows some recent quiet selling by an outside interest at $20 valley, which several nearby producers suddenly decided to combat. Chicago producers have reduced foundry and malleable iron $1 to $22 furnace. Other districts have not been affected, though nowhere are prices strong. Sales have shown a tendency to grow. A sanitary ware manufacturer bought 8000 tons for Louisville. A leading electrical company placed 5000 tons of foundry iron, a considerable part of it with foreign makers.

Another modification of the wire rod schedule effective this week, the second in recent weeks, wipes out an extra of $2.50 for size which has applied for some years.

Many Jobs Awarded

A week characterized by an unusually large number of structural awards gives a total of 36,246 tons. This is in line with the weekly average of the past month. Of important new work are a 10,000-ton hotel in New York and a 7500-ton department store in Baltimore.

Barge construction is providing plate mills with a good tonnage. One order going to Chicago involved 6500 tons.

The Market Section

Award by the Pennsylvania railroad of 200 locomotives is prominent in a dull week of new railroad buying. Freight car orders of the week reached about 1000, the principal lot, 350 by the Pere Marquette going to Canadian builders. Car orders for March totaled 8995 and for the first three months 30,720, against 11,935 for the first quarter of 1925.

The softening of pig iron caused a drop of 32 cents this week in IRON TRADE REVIEW composite of fourteen leading iron and steel products to $38.54, the most abrupt change in several months. This brings the composite to the lowest basis since last November.

Prices, Present and Past

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	April 7, 1926	Mar., 1926	Jan., 1926	Apr., 1925
PIG IRON				
Bessemer, valley, del., Pittsburgh	$21.26	22.76	22.76	22.86
Basic, valley	18.50	20.00	20.00	22.20
Basic, eastern del., eastern Pa.	21.75	22.35	22.75	22.60
*No. 2 foundry, del., Pittsburgh	20.76	22.26	22.26	21.96
No. 2 foundry, Chicago	22.00	23.00	23.00	22.60
*Southern, No. 2, Birmingham	22.00	22.00	22.75	20.00
*Southern Ohio, No. 2 Ironton	21.00	21.00	21.40	21.00
**No. 2X, Virginia furnace	23.00	23.00	23.50	23.75
**No. 2X, eastern del. Phila	23.26	22.76	24.26	23.16
Malleable, valley	19.00	20.50	20.50	20.30
Malleable, Chicago	22.00	23.00	23.00	22.60
Lake Superior charcoal, Chicago	29.04	29.04	29.04	29.04
Gray forge, val., del., Pittsburgh	21.76	21.76	21.76	21.66
Ferromanganese, del., Pittsburgh	92.79	104.79	119.79	119.79
*.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	3.00	3.15	6.90	3.10
Connellsville, foundry, ovens	4.00	4.45	6.40	3.85
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	36.00	36.00	36.50	37.00
Sheet bars, open-hearth, Pittsburgh	36.00	36.00	36.50	37.00
Billets, open-hearth, Pittsburgh	35.00	35.00	35.50	35.80
Wire rods, Pittsburgh	45.00	45.00	45.00	48.80
FINISHED MATERIAL				
Steel bars Pittsburgh	2.00	2.00	2.00	2.05
Steel bars, Chicago	2.10	2.10	2.10	2.20
Steel bars, Philadelphia	2.32	2.32	2.32	2.32
Iron bars, Philadelphia	2.22	2.22	2.22	2.27
Iron bars, Chicago, mill	2.00	2.00	2.00	2.10
Beams, Pittsburgh	1.90	1.90	1.90	2.05
Beams, Philadelphia	2.22	2.20	2.17	2.32
Beams, Chicago	2.10	2.10	2.10	2.25
Tank plates, Pittsburgh	1.90	1.85	1.90	2.00
Tank plates, Philadelphia	2.22	2.12	2.12	2.32
Tank plates, Chicago	2.10	2.10	2.10	2.25
Sheets, black, No. 28, Pittsburgh	3.25	3.25	3.35	3.35
Sheets, blue anl., No. 10, Pittsburgh	2.50	2.50	2.50	2.55
Sheets, galvanized, No. 28, Pittsburgh	4.60	4.60	4.60	4.50
Sheets, black, No. 28, Chicago	3.50	3.50	3.50	3.65
Sheets, blue anl. No. 10, Chicago	2.65	2.65	2.65	2.75
Sheets, galvanized, No. 28, Chicago	4.75	4.75	4.75	4.75
Wire nails, Pittsburgh	2.65	2.65	2.65	2.80
Wire nails, Chicago	2.70	2.70	2.70	2.90
Tin plate per base box, Pittsburgh	$5.50	5.50	5.50	5.50
OLD MATERIAL				
Heavy melting steel, Pittsburgh	17.25	17.70	18.75	17.00
Heavy melting steel, eastern Pa.	16.75	16.10	17.35	15.50
Heavy melting steel, Chicago	14.25	14.25	14.95	15.00
No. 1 wrought, eastern Pa.	18.00	18.00	18.35	18.40
No. 1 wrought, Chicago	14.50	14.50	15.00	14.60
Rails for rolling, Chicago	16.50	16.50	17.55	15.85

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (April 7, 1926)	$38.54
Last week (March 31, 1926)	38.86
One month ago (March, 1926)	38.88
Three months ago (January, 1926)	38.90
One year ago (April, 1925)	39.45
Ten years ago (April, 1916)	39.13
Thirteen years ago (April, 1913)	27.74

Late News Flashes

Announce Institute Meeting Date

New York, April 6.—The American Iron and Steel institute announces that its spring meeting will be held at the Hotel Commodore on Friday, May 21. This date was selected because if the meeting were to be held on the fourth Friday of May, according to custom, it would fall too close to the Memorial day holiday.

Plan Merger of Three Pipemakers

Lynchburg, Va., April 6.—Dillon, Read & Co., New York, financiers, it is just revealed, are negotiating with stockholders of the Lynchburg Foundry Co. and Glamorgan Pipe & Foundry Co. of this city and the National Pipe & Foundry Co., Birmingham, Ala., for a merger of the three companies. Indications are that the negotiations now are near conclusion.

Japanese Raise Sheet Tariffs

New York, April 6.—While no details have been received as yet on the new Japanese tariff it is learned here that corrugated and galvanized sheet duties have been increased, thus encouraging corrugating, galvanizing and other finishing of sheets in Japan. Black sheet duties also are higher to protect Japanese production.

Valley Operations Fairly Steady

Youngstown, O., April 6.—A lull in buying necessitated a curtailment of sheet mill operations this week from 87 to 82 per cent. Hot mill departments at some plants will close Friday night. District open-hearth schedules have been stepped up to 81 per cent due to activity at the Ohio works of the Carnegie Steel Co.

Pittsburgh Averages 85 Per Cent

Pittsburgh, April 6.—Steel mill operations in the Pittsburgh territory are averaging slightly above 85 per cent. Some of the independents, such as the Pittsburgh Steel Co., the Pittsburgh Crucible Steel Co., Jones & Laughlin Steel Corp., and others are on an 80 per cent basis, while the Carnegie Steel Co. is somewhat higher.

Authorize New Illinois Freight Rates

Washington, April 6.—Illinois freight association railroads were authorized today by the interstate commerce commission to make rates on carloads of manufactured iron and steel from Chicago, Milwaukee and St. Louis in the Illinois freight association territory, in accordance with the Jones & Laughlin Steel Corp. rate decision as far as long and short haul provisions of the fourth section of the interstate commerce act are concerned.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$35.00
Pittsburgh, bessemer	35.00
Youngstown	35.00
Philadelphia	40.30 to 41.30
Chicago	35.00
Forging, Pittsburgh	40.00
Forging, Philadelphia	45.30 to 46.30

SHEET BARS

Pittsburgh	$36.00
Youngstown	36.00

SLABS

Pittsburgh	$35.00
Youngstown	35.00

WIRE RODS

Pittsburgh	$45.00
Cleveland	45.00
Chicago	46.00

Standard extras, $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp, Pittsburgh	1.85c to 1.90c
Universal skelp, Pittsburgh	1.85c to 1.90c
Sheared skelp, Pittsburgh	1.85c to 1.90c

Structural Shapes

Pittsburgh	1.90c to 2.00c
Philadelphia	2.12c to 2.32c
New York	2.14c to 2.34c
Chicago	2.10c
Cleveland	2.09c to 2.19c
Birmingham	2.05c to 2.15c

Steel Plates

Pittsburgh	1.85c to 1.90c
Philadelphia	2.22c
New York	2.24c
Chicago	2.10c
Cleveland	2.09c
Birmingham	2.00c to 2.10c

Iron and Steel Bars

Pittsburgh, soft steel	2.00c to 2.10c
Pittsburgh, cold finishing	2.15c to 2.25c
Pittsburgh, forging quality	2.15c to 2.25c
Philadelphia, soft steel	2.32c
New York, soft steel	2.34c
Chicago, soft steel	2.10c
Cleveland, soft steel	2.19c to 2.29c
Birmingham, soft steel	2.15c to 2.25c
San Francisco, soft steel	2.60c
Pittsburgh, refined iron	3.00c to 4.50c
Pittsburgh, reinforcing billet	2.00c to 2.10c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	2.00c
Mill rail steel	1.85c to 1.95c
Philadelphia, common iron	2.22c
New York, common iron	2.24c
Chicago, common iron	2.00c

Hoops, Bands, Strips

Hoops, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh over 6 in.	2.30c
Hot rolled strip steel, Pittsburgh stamping quality	2.30c
Hot rolled strip steel, Chicago	2.50c to 2.60c
Bands, Chicago, under 6 inches	2.60c
Bands, Chicago, 6 in. and over	2.50c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh, Cleveland	3.90c
Worcester, Mass., Chicago	4.05c to 4.15c

Cold Finished Steel

Cold finished steel bars, drawn, or rolled Pittsburgh, Chicago carloads	2.50c
Less carload	2.75c
Steel shafting turned and polished Pittsburgh, Chicago	2.60c

Screw stock base Cleveland $1 higher; and Worcester $3 higher than Pittsburgh and Chicago.

Hot Rolled Alloy Steel

Pittsburgh or Chicago

S. A. E. Series—	
2300 (3½ per cent nickel)	4.60c
3100 (Nickel chromium)	3.60c
6100 (Chrome vanadium)	4.40c
6100 (Chrome vanad. spring)	3.85c
9250 (Silico-mang. spring)	3.25c to 3.40c

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relaying rails, Pittsburgh	23.00 to 25.00
Light rails, 25 to 45 mill g.t.	35.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7-16-inch and smaller, Pitts.	3.00c to 3.10c
Spikes, boat and barge, Pitts.	3.25c
Spikes, railroad, Chicago	2.90c to 3.00c
Track bolts, Pitts. standard	3.90c to 4.15c
Track bolts, Chicago	3.90c to 4.15c
Tie plates, Pittsburgh	2.35c
Tie plates, Chicago	2.25c to 2.35c

Wire Products

To Jobbers in Carloads

F.o.b. Cleveland and Pittsburgh base

Wire nails	2.65c
Galv'd nails smaller than 1-inch	4.90c
Galv'd nails, 1-inch and over	4.65c
Plain wire	2.50c
Annealed wire	2.65c
Galvanized wire No. 9 gage	3.10c
Barbed wire, painted	3.10c
Barbed wire, galvanized	3.35c
Polished staples	3.10c
Galvanized staples	3.35c

Coated nails, 100 pound kegs, subject to card of extras Feb. 1, 1926 over regular wire nail base.

Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts. $20.03

Joliet, DeKalb and Waukegan, Ill., and Anderson, Ind., prices $1 per ton over Cleveland-Pittsburgh base on products made there; Chicago $1 higher; Duluth $2 higher and Worcester, Mass., and Fairfield, Ala., $3 higher.

Sheets

SHEET MILL BLACK

No. 28, Pittsburgh, base	3.25c to 3.35c
No. 28, Philadelphia, delivered	3.67c
No. 28, Gary, Indiana Harbor	3.45c
No. 28, Chicago delivered	3.50c

TIN MILL, BLACK

No. 28, Pittsburgh	3.25c to 3.35c
No. 28, Gary base	3.45c

GALVANIZED

No. 28, Pittsburgh, base	4.60c
No. 28, Philadelphia, delivered	4.92c
No. 28, Gary, Indiana Harbor	4.70c
No. 28, Chicago, delivered	4.75c

BLUE ANNEALED

No. 10, Pittsburgh, base	2.50c
No. 10, Philadelphia, delivered	2.82c
No. 10, Gary, Indiana Harbor	2.60c
No. 10, Chicago, delivered	2.65c

AUTOMOBILE SHEETS

No. 22, Pittsburgh, base	4.40c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base	$5.50

Gary, Ind., base 10 cents higher.

Long ternes, base	4.85

*This price is subject to quantity differentials established by individual regulations.

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less and $4 per ton higher. Chicago delivered 2½ points less and $5 per ton higher.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	68½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled, 3¼ to 3½-inch	46 off

Chain, Piling, Cut Nails

Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.25c to 2.30c
Cut nails, c. l., f.o.b. mills	2.80c

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago	$53.20 to 54.20
Six-inch and over, Chicago	49.20 to 50.20
Four-inch, Birmingham	44.00 to 45.00
Six-inch and over, Birmingham	40.00 to 41.00
Four-inch, New York	56.50 to 57.60
Six-inch and over, New York	51.50 to 52.60

Standard fittings, Birmingham base $110.00, 6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $5 higher than Class B

Nuts and Bolts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Hot pressed square tapped or blank	$4.00 off list
Hot pressed hexagon tapped or blank	$4.40 off list
Cold punched square or hexagon blank	$4.10 off list
Cold punched square or hexagon tapped or blank	$4.10 off list
Cold punched U. S. S. semifinished hexagon nuts ⅝-inch and larger	75, 10 and 5 off
Cold punched U. S. S. semifinished hexagon nuts 9/16-inch and smaller	80, 10 and 5 off
Cold finished S. A. E. semifinished ⅝-inch and larger	75, 10, 10 and 5 off
Cold finished S. A. E. semifinished 9/16-inch and smaller	80, 10, 10 and 5 off

CARRIAGE BOLTS

(⅜ x 6-inch, smaller and shorter)

Rolled thread	50, 10 and 10 off
Cut thread (all sizes)	50 and 10 off
Eagle carriage bolts (Eagle list)	65 and 10 off

MACHINE BOLTS

(⅜ x 4-inch, hot pressed nuts)

Rolled thread	60 and 10 off
Cut thread (all sizes)	50, 10 and 10 off

(All sizes cold punched nuts)

Cut thread	45, 10 and 5 off
Lag screws	60, 10 and 10 off
Plow bolts Nos. 3 and 7 heads	50 and 10 off
All other standard heads	50 and 10 off plus 20 per cent
Tap bolts	80 off
Bolt ends with hot pressed nuts	50, 10 and 10 off
Bolt ends with cold punched nuts	45, 10 and 5 off
Blank bolts	50, 10 and 10 off
Rough stud bolts with nuts (250 pieces or more of a size)	40 and 10 off
Stove bolts, 80, 10 and 5 off plus 2½ off in bulk.	
Tire bolts	60 and 5 off

SEMIFINISHED CASTELLATED AND SLOTTED NUTS

Per 1000, f.o.b. producer's plant, freight allowed

	S.A.E. Castellated	U.S.S. Slotted
¼	$ 4.40	$ 4.40
5/16	5.15	5.15
⅜	6.20	6.60
7/16	7.90	9.00
½	10.10	10.50
9/16	13.80	14.20
⅝	17.00	17.30
¾	28.50	24.00
⅞	36.00	36.00
1	55.50	58.00
1⅛	89.00	89.00
1¼	126.00	131.00
1⅜	183.50	183.50
1½	210.00	210.00

Larger sizes—Prices on application

HEXAGON CAP SCREWS

Milled	80 and 10 off
Upset	80, 10 and 10 off

SQUARE HEAD SET SCREWS

Milled	80 and 5 off
Upset	80, 10 and 5 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	2.50c to 2.60c
Structural rivets, carloads, Chicago	2.75c
**Rivets, 7/16-inch and smaller, Pittsburgh	70 and 10 to 70 and 5 off
**Rivets, 7/16-inch and smaller Chicago	70 and 10 to 70 and 5 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.30 to 6.40 off
Wrought c.l., Pitts. dist.	6.25 off
Lock Washers, f.o.b. factory	35 off

Pig Iron

Valley Prices Marked Down $1 to $1.50, Due to Outside Aggression—Tonnages Closed in Various Districts Are Larger

VALLEY pig iron prices are down $1 to $1.50 from the general levels of a week ago, due to aggressive selling by an outside interest, under the valley market. For several weeks this seller has been taking tonnage at $20, base, valley, and lower in some instances, it is reported, while the majority of valley furnaces were holding to $20.50. The result is that in a general scramble for orders foundry iron has been marked down to $19, base, valley; malleable to $19 to $19.50; bessemer to $19.50 to $20, and basic to $18.50 to $19, for second quarter. This is the first break in any of the districts from prices that have been almost stationary for two or three months. Chicago iron is down $1. Sales in the aggregate for the week are not as large as in the week preceding.

PITTSBURGH, April 6.—After a more or less stabilized pig iron market in the past three months, prices broke Monday and today $1.50, although some interests have reduced only malleable and steelmaking grades $1 from levels prevailing last week. One valley merchant producer now is quoting $18.50 on basic, $19.50 on bessemer, and $19 on malleable and No. 2 foundry. Another merchant interest quotes $19.50, $19 and $18 as minimum on malleable, bessemer and basic, respectively.

Various interests are busily negotiating with every pig iron user within a wide radius by telephone, telegraph and otherwise, urging them to close now before production costs necessitate a price advance. One explanation of the reduction at a time when sales were just commencing to develop at levels prevailing hitherto is that valley and local producers were loathe to see a large tonnage of foundry iron going out of the district on a $19.50, base, quotation. One decided to cut an additional 50 cents, and others followed. To be consistent other grades were marked down accordingly, although no sales or inquiries for basic are noted.

In this way melters now are sharing in profits made last winter by several interests on coke during anthracite strike. Some orders, particularly for bessemer and malleable were taken as late as yesterday at last week's figures but were adjusted today to the new levels.

Boston, April 6.—Foundry pig iron sales at Boston show moderate improvement. Sales include 500 tons of malleable to the Rhode Island Malleable Works, Hillsgrove, R. I.; 1500 tons to the Washburn Wire Co., Phillipsdale, R. I.; 1000 tons to a Massachusetts foundry, and several smaller lots bringing the total close to 6000 tons. Foreign iron which is offered at $2 to $5 below the domestic price is conspicuous in the trading. Buffalo prices are unchanged. Eastern Pennsylvania is well established at a $22 base, furnace. Foreign iron ranges from $20 to $22 f.o.b. Boston.

New York, April 6.—The General Electric Co. has purchased around 5000 tons of foundry iron for second quarter, considerable of which is coming from foreign sources. The Central Foundry Co., New York, closed for its requirements, understood to be about 4000 tons of foreign and 1000 tons of domestic for second quarter, Lansdale, Pa. and Baltimore plants. Otherwise pig iron sales are moderate. The Thatcher Furnace Co. is inquiring.

Philadelphia, April 6.—The Pennsylvania railroad has placed its second quarter requirements of foundry iron; it is understood a total of about 5000 tons. One consumer closed for 3000 tons of low phosphorus. Otherwise pig iron sales are scattered and the total moderate. The Union Radiator Co. is inquiring for 3000 tons of foundry iron for second quarter.

Buffalo, April 6.—New inquiry for pig iron is estimated at 6000 to 8000 tons. A car wheel manufacturer is in the market for 1000 tons. An order for 1500 tons of foundry was placed locally last week. Makers say $21 is minimum for low silicon foundry and malleable. Production here is unchanged.

Cleveland, April 6.—Several of the large buyers who were in the market a week or two ago have closed for round tonnages of pig iron for second quarter, but the total amount placed on books of furnace companies represented here, during the past week, was slightly under that of the preceding week. The market still lacks impetus for a buying movement, and some interests do not anticipate one, unless it should develop later in the second quarter and be coupled with orders for the third quarter. Sales for the week total 15,000 tons. Inquiries pending amount to 5000 tons, although there is some quiet negotiating by one or two of the large melters. One of these obtained prices, but decided not to buy at present. The General Electric Co. closed for 5000 tons for various plants, including 1600 tons for Erie, Pa., part of which went to a Cleveland furnace interest. The Westinghouse Electric & Mfg. Co. closed for 2600 tons for its Cleveland plant,, with two Cleveland companies. Nominally, the Cleveland furnace quotation for local delivery remains unchanged at $21, but in view of the fact that the valley base price has been depressed to $19 it is believed $20.75 to $21.00, delivered in Cleveland, now more nearly represents the Cleveland market at present. To meet the competition from the Cleveland furnace a lake furnace west of here has gone to $21.50, base, for sales in Ohio, while $22 continues on sales in Michigan territory.

Chicago, April 6.—Spot selling of northern pig iron is heavier, a natural sequel to holding back of second quarter requirements by some melt-

(*Concluded on Page* 963)

Pig Iron Prices

Prices per gross ton

Bessemer, valley	$19.50 to 20.00
Bessemer, Pittsburgh	21.26 to 21.76
Basic, valley	18.50 to 19.00
Basic, Pittsburgh	20.26 to 20.76
Basic, Buffalo	20.00 to 20.50
Basic, del., eastern Pa.	21.50 to 22.00
Malleable, valley	19.00 to 19.50
Malleable, Pittsburgh	20.76 to 21.26
Malleable, del., Cleveland	20.75 to 21.00
Malleable, Chicago	22.00
Malleable, Buffalo	21.00
Malleable, del., eastern Pa.	23.25 to 24.00
No. IX, eastern del., Phila.	23.50 to 24.76
No. IX, Buffalo	22.50 to 23.50
No. 1 foundry, Chicago	22.50
No. 2 foundry, valley	19.00
No. 2 foundry, Pittsburgh	20.76
No. 2 foundry, Buffalo	21.00
No. 2 foundry, Chicago	22.00
No. 2 foundry, Granite City	23.50 to 24.00
No. 2 foundry, Ironton furnace	20.50 to 21.00
No. 2 foundry, del., Cleveland	20.75 to 21.00
No. 2 foundry, del., Phila.	22.76 to 23.39
No. 2 foundry, N. J., tidewater	23.39 to 23.76
No. 2X, eastern del., Phila.	23.26 to 23.89
No. 2X, east. N. J., tidewater	23.89 to 24.26
No. 2X, foundry, Buffalo, furnace	21.50
No. 2X, eastern del., Boston	25.65 to 26.65
No. 2X, Buffalo, del., Boston	26.41 to 26.91
Continental foundry f.o.b. Boston	20.50 to 21.50
India, 2.25 to 2.75 silicon, delivered cars, Boston	21.00 to 22.00
No. 2 Alabama, Birmingham	22.00
No. 2 Alabama, Cincinnati	26.69
No. 2 Tenn., Birmingham	21.50
No. 2 Tenn., Cincinnati	25.19
No. 2 southern, Philadelphia	27.01 to 28.01
No. 2 southern, Chicago	28.01
No. 2 southern, Chicago (barge and rail)	26.18
No. 2 southern, Boston (rail and water)	27.91 to 28.91
No. 2 southern, Cleveland	27.01 to 28.01
No. 2 Southern, St. Louis	25.42 to 26.42
No. 2X, Virginia, furnace	23.00 to 23.25
No. 2X, Virginia, Phila.	28.17 to 28.42
No. 2X, Virginia, Jersey City	28.54 to 28.79
No. 2X, Virginia, Boston	28.92 to 29.17
Gray forge, eastern Pa.	21.50 to 22.50
Gray forge, val. del. Pitts.	20.26
Low phos., standard, valley	28.00 to 28.50
Low phos., standard, Phila.	24.76 to 27.79
Low phos., Lebanon, furnace	23.00 to 24.00
*Low phos., English	24.26 to 24.76
Charcoal, Birmingham	31.00 to 32.00
Charcoal, Superior, Chicago	29.04

Silvery iron Jackson county, Ohio furnace, 5 per cent $27.50; 6 per cent $28.50; 7 per cent $29.50; 8 per cent $30.50; 9 per cent $32.00; 10 per cent $34.00; 11 per cent $36.00; 12 per cent $38.00; 13 per cent $40.00; and 14 per cent $42.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $36.00; 11 per cent $38.00; 12 per cent $40.00; 13 per cent $42.00; 14 per cent $44.00; 15 per cent $46,00; 16 per cent $49.00; 17 per cent $51.50.

*Duty paid, delivered Philadelphia consumers.

Coke

Demand for Beehive Coke Less Active After Recent Buying—By-Product Market Lower

LESS activity is noted in the market for Connellsville coke, while prices continue unchanged at $3.25 on contracts and $3 on spot furnace fuel. Curtailment of production has given operating companies better backlogs. Prices of by-product coke have been revised in the leading districts. Demand generally is quiet.

Pittsburgh, April 6.—Operating beehive coke producers have good backlogs. Blast furnace business has been taken at $3.25, or slightly less in the past few weeks. No furnaces now are seeking fuel. The Claire stack, blown in Sunday, is using coke from an affiliated interest.

Present market activity is confined to small buyers, some nonmetallurgical users and a few smelters. Spot sales of the standard furnace grade are noted again this week at $3 to $3.25, including one lot of 1000 tons sold yesterday at that maximum. While some medium sulphur coke is available at $2.75 to $2.85, one smelter contract recently taken carried a price of $3. Some foundry cullings, and also first and second drawings were sold in the week of $2.40 to $2.50. Distress foundry coke of standard grade is selling at $3.75. The regular market is $4 to $4.50. Premium brands are $5. Only a limited amount of foundry coke contracting is going on.

Production of coke in the Connellsville region for the week ended March 27 was 187,630 tons, compared with 190,010 tons in the preceding week, according to the *Connellsville Courier*.

Boston, April 6.—By-product producers in New England have lowered the price on foundry coke to $12.50 delivered. Domestic demand holds up well but foundries have started to ease off on shipments for reserve stock.

St. Louis, April 6.—Demand for metallurgical and industrial coke is holding up well, and prices are firm. Contracting has picked up. Due to the firmer prices being asked by the coal interests, no decline in coke prices is anticipated for a number of months, if at any time this year.

New York, April 6.—Coke demand is quiet. Prices of spot beehive foundry are unchanged at $4.25 to $5.50, Connellsville, depending on brand. By-product foundry coke has been reduced 75 cents to $9.59 and $10.75, delivered at Newark and other northern New Jersey consuming points, effective April 1.

Cincinnati, April 6.—The movement of by-product foundry coke is active. Demand for furnace coke is dull and offerings of the Wise county grade are plentiful at $3.25 to $3.50, ovens. Producers of by-product foundry fuel are shipping their current output.

Birmingham, Ala., April 6.—Coke demand still is good and production steady. Quotations are firm, around $5.50 for the foundry grade, with $6 done occasionally.

Coke Prices

	Beehive, Ovens Prices per net ton	
Connellsville furnace	$ 3.00 to	3.25
Connellsville foundry	4.00 to	4.50
New River foundry		7.50
New River foundry	4.75 to	5.00
Wise county furnace	3.25 to	3.50
Wise county foundry	4.50 to	5.00
Alabama foundry		5.50
Alabama furnace	**5.00 to**	**5.25**
By-Product		
Foundry, Newark, N. J.; del.	$9.59 to	10.75
Foundry, Chicago, ovens		**10.50**
Foundry, New England, del.		12.50
Foundry, St. Louis		**10.00**
Foundry, Granite City, Ill.		**10.00**
Foundry, Birmingham	**5.50 to**	**6.00**
Foundry, Indianapolis, del.		**10.75**

Ferroalloys

Spiegeleisen Sold for Third Quarter—Ferromanganese Is Quieter

New York, April 6.—Several lots of domestic spiegeleisen have been sold for third quarter delivery at the usual price of $34, furnace for 20 per cent. Ferromanganese, after its recent active movement impelled by sharp price competition, is quieter.

Shipments of special alloys are running along at rates proportionate to those in the steel industry. March was a big month, and in ferrovanadium shipments were said by some producers to be the best in several years. Shipments of alloys generally are on contracts and prices are unchanged. Wolframite, tungsten ore, continues weak, mostly about $11.75 a short ton unit.

Pittsburgh, April 6.—Following the recent excitement in ferromanganese, the ferroalloys market has settled down. So far as can be learned, the $88 price on ferromanganese was developed only in one direction. The leading domestic producer adjusted its contracts to $90, having guaranteed its customers against decline from the $95 level. English and German material still is held at $110, seaboard. Specifications against contracts continue to come in fairly well, but new sales of ferromanganese as well as of other alloys are absent. Some 10 to 12 per cent ferrosilicon orders for single carloads and one for 500 tons for second quarter are noted at full market prices.

Chicago, April 6.—Fair sales of ferromanganese have been made over the past week and a large part of the districts requirements over the remainder of the year has been placed. This alloy is unchanged at $88, seaboard. Spiegeleisen is inactive but unchanged at $35, domestic furnace.

Replacing Blast Furnace

Youngstown, O., April 6.—Replacement of No. 2 blast furnace of the Republic Iron & Steel Co., in the Haselton group has been started. The work which includes the razing of the present furnace was awarded the William B. Pollock Co. The new furnace will have a capacity of 750 tons per day.

Appointed Sales Agent

Joseph T. Ryerson & Son Inc., Chicago, have just announced the appointment of the Brandes Machinery Co., Keith building, Cleveland, as exclusive representative for their complete line of metal working machinery and small tools. F. A. Brandes, head of the Brandes company has been associated with the machinery trade in Cleveland for a number of years.

Receiver Is Appointed

St. Louis, April 6.—Vincent Y. Dallman, editor of the *Illinois State Register*, Springfield, Ill., has been appointed by Federal Judge Fitz Henry as receiver of the St. Louis Coke & Iron Co. He succeeds James F. O'Donnell, Bloomington, Ill., who died last week, who succeeded James Duncan, who died early in the year. Reorganization has been completed and the appointment is a formality to bring legal features to a conclusion.

Waukegan Foundry Co., Waukegan, Ill., has increased capital from $60,000 to $100,000.

Ferroalloy Prices

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resales	$88.00 to 110.00
Ferromanganese delivered Pittsburgh	92.79 to 114.79
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	34.00
Ferrosilicon, 50 per cent contract freight allowed	85.00
Ferrotungsten standard, per pound contained	1.10 to 1.17
Ferrochrome, 60 to 70 chromimum, 6 to 8 carbon, cents per pound contained, delivered	11.00 to 11.50
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	3.25 to 4.00
Ferro-carbon-titanium, car lots, producer's plant, net ton	200.00
Ferrophosphorus, electrolytic, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent material)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23 to 25 per cent, f.o.b. Anniston, Ala., (24 per cent materials)	122.50

†Duty paid.

Plates

Eastern Demand Strengthens Market—Shipments at Chicago Up to March Average

HEAVY bookings by eastern plate mills, and the winding up of first quarter contracts have given the market more firmness; 1.80c, Pittsburgh, is outstanding in only a few instances. Barge and carbuilders have placed 17,000 tons with Chicago mills; demand for barges is a feature at Pittsburgh. New locomotive business calls for about 8000 tons.

PLATE PRICES, PAGE 948

Philadelphia, April 6.—Heavy new plate bookings, with substantial specifications on expiring first quarter contracts are enabling eastern mills to operate above 75 per cent. Seven thousand tons of plates are involved in 175 locomotives placed by the Pennsylvania railroad with the Baldwin Locomotive Works, and the plate tonnage is being distributed to various eastern yards. The William Cramp & Sons Ship & Engine Bldg. Corp. is low bidder on one scout cruiser for the government; also low bidder on engines for a scout cruiser to be built at the Brooklyn navy yard. The Pennsylvania railroad still is considering building 100 locomotives at Altoona. A price of 1.80c, Pittsburgh, now is outstanding only in isolated cases. The eastern plate market generally is firm at 1.90c, Pittsburgh.

Boston, April 6.—Second quarter plate contracts are being entered at 1.90c, Pittsburgh, and prices below this level are fast disappearing. Inquiry and sales show moderate improvement. Providence, R. I., is taking bids on approximately 600 tons for a bridge.

Pittsburgh, April 6.—Barges are in good demand and it is from the barge builders that much of present plate tonnage is arising. A large number of steel shippers on the Ohio river are planning increases to their barge fleets this year. The Weirton Steel Co. is inquiring for 20 to 30. While 1.90c is commonly quoted. buyers continue to make special efforts to obtain concessions.

Cleveland, April 6.—Plate prices are pronounced to be the firmest in many months as deviations from 1.90c, Pittsburgh or 2.09c, Cleveland have disappeared and good tonnage is being taken by all the mills at the full figure. The only exception noted is where lower tank steel prices have been named as a base on special boiler and firebox qualities carrying attractive extras. Present tonnage is fairly good. About 1000 tons of tank and special steel for 25 locomotives for the Pennsylvania railroad awarded to builders in this district will go to Pittsburgh and Cleveland mills.

Detroit, April 6.—Adoption of a comprehensive program by the department of water supply, providing adequate supplies to Detroit and vicinity for the next 30 years, is expected to create demand for a good tonnage of steel. The water department plans laying many miles of large water mains, from 42 to 72 inches in diameter. The present practice is to build the mains of steel plates.

Chicago, April 6.—Specifications for plates thus far in April have been substantially as heavy as the average for March. One maker has universal plate capacity booked to the extent of ten weeks but can sandwich in pressing needs. These, however, take no better than 4-week delivery. The Manitowoc Shipbuilding Corp. has placed 6500 tons for barges. Upward of 10,000 tons has been placed by carbuilders. Pittsburgh district makers offer much less competition than in the first quarter. Oil storage tank demand has been declining. The general market quotation on plates is 2.10c, Chicago.

for standard billets and slabs.

CONTRACTS PLACED

6500 tons, by Manitowoc Shipbuilding Corp., Manitowoc, Wis., for three barges for Canadian Pacific railroad, to Chicago district makers.

800 tons, twenty small special barges for the United States engineers, St. Louis, to the Dravo Contracting Co.

750 tons, five barges for the Pittsburgh Steel Co., Pittsburgh, to the Ritter-Conley Co.

600 tons, two 80,000-barrel tanks for Wilshire Oil Co., Los Angeles, to Llewellyn Iron Works.

500 tons, pipe line, the Dalles, Oreg., to King Bros. Boiler Works.

450 tons, three barges, for shipment out of stock for the Mississippi River Sand & Material Co., St. Louis, to the Dravo Contracting Co.

180 tons, pipe line, Tacoma, Wash., to Birchfield Boiler Co.

CONTRACTS PENDING

3000 to 4500 tons, 20 to 30 barges for the Weirton Steel Co., Weirton, W. Va.; bids being taken.

1125 tons, five oil carrying barges for the Crusader Oil Co., Baton Rouge, La.; bids again being asked.

1000 tons, seven oil tanks, Baton Rouge, La.; bids asked.

350 tons, diesel engine towboat for Clyde Paden, individual operator on the Ohio river; bids being taken.

200 tons, two barges for the Pittsburgh Plate Glass Co., Creighton, Pa.; bids being taken.

Semifinished

Second Quarter Sheet Bars, Billets and Slabs Covered—Wire Rod Extra Removed

MANY consumers have covered second quarter requirements of sheet bars at $36, Pittsburgh, and standard billets and slabs at $35. Wire rods now are quotable at the flat price of $45, Pittsburgh and Cleveland, and $46 Chicago, following a recent reduction of the $2.50 extra for size to $1.50 and the waiving this week of the $1.50 extra by leading makers.

SEMIFINISHED STEEL PRICES, PAGE 948

Pittsburgh, April 6.—Several additional contracts for semifinished steel have been written during the past few days, and now practically all users of billets, sheet bars and slabs are covered for second quarter. So far as can be learned this was done without price concessions. $35 applying on 4 x 4-inch rerolling billets and 2 x 8-inch slabs, and $36 on small billets and sheet bars. One or two of the producers are maintaining a $2 50 differential on small billets, making the price $37.50 instead of $36, but no business is noted at that level. Forging billets quoted nominally at $42 in some directions have been sold at $40 for the second quarter, numerous buyers being under contract at that level. Wire rods now are selling at a flat price for all sizes of $45, Pittsburgh and Cleveland, and $46, Chicago, this change being effective this week. Up to two or three weeks ago an extra of $2.50 per ton was charged for over ⅜-inch. This was reduced at that time to $1.50. The extra now has been eliminated entirely.

Philadelphia, April 6.—Further sales of wire rods are noted at $45, Pittsburgh. Billet sales are small and prices are unchanged.

Youngstown, O., April 6.—Quotations applying on open market or contract transactions of semifinished materials includes $36 for sheet bars and small billets and $35, Youngstown, for standard billets and slabs.

Cleveland, April 6.—A few additional contracts for sheet bars, billets and slabs for second quarter have been placed with a Cleveland producer, at market prices quoted by trade papers. No sales involving definite prices for prompt or future delivery are reported. The current market is quotable at $35, valley, for standard billets and slabs, and $36 for sheet bars.

Iron and Steel Scrap Prices

Corrected to Tuesday Noon. Gross Tons Delivered to Consumer

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	$13.00 to 14.00
Boston (dealers)	11.00 to 11.50
Buffalo	15.75 to 16.25
Buffalo, No. 1	16.50 to 17.00
Chicago	13.50 to 14.00
Cincinnati (dealers)	12.50 to 13.00
Cleveland, No. 1	14.00 to 14.50
Cleveland, No. 2	13.00 to 13.50
Detroit	13.00 to 13.50
Eastern Pennsylvania	16.00 to 16.75
Bethlehem delivery	15.50
New York (dealers)	11.50 to 12.00
Pittsburgh	17.00 to 17.50
St. Louis	13.25 to 13.50
Valleys, No. 1	17.00
Valleys, No. 2	15.00 to 16.00

COMPRESSED SHEETS

Buffalo	14.75 to 15.25
Chicago	12.00 to 12.50
Cleveland	13.50 to 14.00
Detroit	11.25 to 11.75
Pittsburgh	15.50 to 16.00
Valleys	15.50 to 16.00

BUNDLED SHEETS

Buffalo	13.50 to 14.00
Cincinnati (dealers)	9.00 to 9.50
Cleveland	11.50 to 12.00
Eastern Pennsylvania	13.50
Pittsburgh	14.50 to 15.00
St. Louis	8.50 to 9.00

SHEET CLIPPINGS, LOOSE

Chicago	8.00 to 8.50
Cincinnati	8.00 to 8.50
Detroit	7.00 to 7.50

STEEL RAILS, SHORT

Birmingham	14.00 to 15.00
Buffalo	17.00 to 17.50
Chicago	17.75 to 18.25
Cincinnati (dealers)	17.50 to 18.00
Cleveland (over 6 ft.)	15.00 to 16.00
Detroit	16.00 to 16.50
St. Louis	17.00 to 17.50

STOVE PLATE

Birmingham	14.00 to 14.50
Boston (consumers)	13.50 to 14.00
Buffalo	15.00 to 15.50
Chicago	15.75 to 16.00
Cincinnati (dealers) (net)	9.00 to 9.50
Cleveland	13.00 to 13.50
Detroit (net tons)	13.25 to 13.75
Eastern Pennsylvania	14.50
New York (dealers)	10.25 to 10.75
Pittsburgh	13.50 to 14.00
St. Louis	14.50 to 15.00

LOW PHOSPHORUS

Buffalo	17.75 to 18.25
Cincinnati (dealers)	17.00 to 17.50
Eastern Pennsylvania	20.00 to 21.00
Pitts. billet and bloom crops	21.50 to 22.00

SHOVELING STEEL

Chicago	13.25 to 13.75
Pittsburgh	13.00 to 13.50
St. Louis	13.25 to 13.75

KNUCKLES, COUPLERS, SPRINGS

Chicago	17.25 to 17.75
Eastern Pennsylvania	19.00 to 21.00
Pittsburgh	19.00 to 19.50
St. Louis	14.75 to 15.25

FROGS, SWITCHES, GUARDS

Chicago (cut)	15.25 to 15.75
Eastern Pennsylvania	16.00 to 16.50
St. Louis	15.00 to 15.50

ANGLE BARS—STEEL

Buffalo	16.50 to 17.00
Chicago	16.00 to 16.50
St. Louis	14.50 to 15.00

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	$12.00 to 13.00
Boston (dealers)	13.00 to 13.50
Buffalo, No. 1	14.00 to 14.50
Buffalo, No. 2	15.50 to 16.00
Chicago, No. 1	14.50 to 15.00
Chicago, No. 2	13.50 to 14.00
Cincinnati, No. 1 (dealers)	9.50 to 10.00
Cleveland, No. 1	13.50 to 14.00
Eastern Pennsylvania	18.00
New York, No. 1 (dealers)	14.50 to 15.00
Pittsburgh, No. 1	13.00 to 13.50
Pittsburgh, No. 2	17.00 to 17.50
St. Louis, No. 1	13.00 to 13.50
St. Louis, No. 2	13.25 to 13.75

WROUGHT PIPE

Boston (dealers)	11.00 to 11.50
Buffalo	15.00 to 15.50
Eastern Pennsylvania	16.00 to 16.50
New York (dealers)	12.25 to 12.75

YARD WROUGHT

Boston	12.00 to 12.50
Eastern Pennsylvania	17.00

BUSHELING

Buffalo	14.75 to 15.25
Chicago, No. 1	12.25 to 12.75
Chicago, No. 2	9.00 to 9.50
Cincinnati, No. 1 (dealers)	9.50 to 10.00
Cleveland, No. 1	11.75 to 12.25
Cleveland, No. 2	11.25 to 11.75
Eastern Pennsylvania	14.00 to 15.00
Pittsburgh, No. 1	15.00
St. Louis, No. 1	11.50 to 12.00

MACHINE SHOP TURNINGS

Birmingham	8.00 to 8.50
Boston (chemical)	8.50 to 9.00
Buffalo	11.50 to 12.00
Chicago	9.50 to 10.00
Cincinnati (dealers)	8.00 to 8.50
Cleveland	11.00 to 11.50
Detroit	9.25 to 9.75
Eastern Pennsylvania	14.00
New York (dealers)	9.00 to 10.25
Pittsburgh	13.00 to 13.50
St. Louis	7.75 to 8.25

CAST IRON BORINGS

Birmingham (chemical)	15.50 to 16.50
Birmingham (plain)	8.00 to 9.00
Boston (chemical)	11.00 to 11.25
Boston (dealers)	8.50 to 9.00
Buffalo	13.00 to 13.50
Chicago	11.75 to 12.00
Cincinnati (dealers)	8.50 to 9.00
Cleveland	11.25 to 11.75
Detroit	9.50 to 10.00
Eastern Pennsylvania	14.00
Eastern Pennsylvania (chem.)	15.50 to 16.00
New York (dealers)	9.25 to 10.25
Pittsburgh	12.50 to 13.00
St. Louis	10.50 to 11.00
Valleys	12.50 to 13.00

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	8.50 to 9.00
Buffalo	12.50 to 13.00
Cincinnati (dealers)	8.00 to 8.50
Cleveland	11.25 to 11.75
Detroit	9.50 to 10.00
Eastern Pennsylvania	13.00 to 13.50
New York (dealers)	9.75 to 10.25
Pittsburgh	12.50 to 13.00

PIPES AND FLUES

Chicago	12.00 to 12.50
Cincinnati (dealers)	8.50 to 9.00
Cleveland	11.00 to 11.50
St. Louis	9.75 to 10.25

RAILROAD GRATE BARS

Buffalo	13.50 to 14.00
Chicago	15.00 to 15.50
Cleveland	13.50 to 13.75
Eastern Pennsylvania	14.50
New York (dealers)	11.25 to 11.75
St. Louis	13.25 to 13.75

FORGE FLASHINGS

Boston (dealers)	9.50 to 10.00
Buffalo	13.00 to 13.50
Chicago	10.00 to 10.50
Cleveland (under 10 in.)	12.00 to 12.50
Cleveland (over 10 in.)	12.00 to 12.50
Detroit	9.25 to 9.75
Pittsburgh	14.00 to 14.50

FORGE SCRAP

Boston (dealers)	9.50 to 10.00
Chicago	18.00 to 18.50
Eastern Pennsylvania	14.50 to 15.00

ARCH BARS AND TRANSOMS

Chicago	22.50 to 23.00
St. Louis	20.50 to 21.00

Iron Steel Works Scrap

AXLE TURNINGS

Boston dealers	$9.50 to 10.00
Buffalo	14.50 to 15.00
Chicago	14.50 to 15.00
Cleveland	13.75 to 14.25
Eastern Pennsylvania	15.00
Pittsburgh	16.00 to 16.50
St. Louis	10.25 to 10.75

STEEL CAR AXLES

Birmingham	18.00 to 19.00
Boston (shipping point)	18.00 to 18.50
Buffalo	16.50 to 17.00
Chicago	19.50 to 20.00
Cleveland	17.50 to 18.00
Eastern Pennsylvania	24.00 to 25.00
Pittsburgh	22.00 to 22.50
St. Louis	20.00 to 20.50

SHAFTING

Boston (shipping point)	17.50 to 18.00
Chicago	19.75 to 20.25
Eastern Pennsylvania	22.00 to 23.00
New York (dealers)	17.50 to 18.00
St. Louis	16.25 to 16.75

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	$16.00 to 16.50
Boston (consumers)	17.50 to 18.00
Buffalo, iron	15.50 to 16.00
Buffalo, steel	16.50 to 17.00
Chicago, iron	16.75 to 17.25
Chicago, steel	18.00 to 18.50
Cincinnati	12.50 to 13.00
Eastern Pennsylvania	18.00 to 18.50
New York iron (dealers)	14.50 to 15.00
Pittsburgh, iron	17.50 to 18.00
Pittsburgh, steel	18.50 to 19.00
St. Louis, iron	16.00 to 16.50
St. Louis steel	17.00 to 17.50

NO. 1 CAST SCRAP

Birmingham, cupola	17.00 to 18.00
Boston	19.00 to 19.50
Buffalo	15.50 to 16.00
Chicago, No. 1 machinery	18.75 to 19.25
Chicago No. 1 railroad or agricultural	17.75 to 18.00
Cincinnati No. 1 Machinery cupola (net tons dealers)	18.50 to 19.00
Cleveland, cupola	17.25 to 17.75
Detroit (net tons)	14.75 to 15.25
Eastern Pennsylvania, cupola	18.00 to 18.50
New York, cupola (dealers)	15.00 to 15.50
Pittsburgh, cupola	17.00 to 17.50
San Francisco, delivered	20.00 to 21.00
Seattle	17.00
St. Louis, railroad	16.00 to 16.50
St. Louis, agricultural	16.25 to 16.75
St. Louis, machinery	18.50 to 19.00
Valleys	17.50

HEAVY CAST

Boston	17.50 to 18.00
Buffalo (breakable)	14.50 to 15.00
Cleveland	13.00 to 13.25
Detroit (Automobile) (net tons)	19.50 to 20.50
Eastern Pennsylvania	16.50 to 17.00
New York (dealers)	14.00 to 14.50
Pittsburgh	15.00 to 15.50

MALLEABLE

Boston, railroad	19.50 to 20.00
Buffalo	19.50 to 20.00
Chicago, agricultural	16.50 to 17.00
Chicago, railroad	17.50 to 18.00
Cincinnati, railroad (dealers)	14.50 to 15.00
Cincinnati, agricultural (dealers)	18.00 to 18.50
Cleveland, agricultural	18.00 to 18.50
Cleveland, railroad	19.00 to 19.50
Detroit	14.75 to 15.25
Eastern Pennsylvania, railroad	17.00
Pittsburgh, railroad	18.50 to 19.00
St. Louis, agricultural	13.50 to 14.00
St. Louis, railroad	15.75 to 16.25

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham	$15.00 to 16.00
Boston (dealers)	12.50 to 13.50
Buffalo	17.00 to 17.50
Chicago	16.25 to 16.75
Cleveland	17.00 to 17.25
Eastern Pennsylvania	17.50 to 18.00
New York	14.00 to 14.50
Pittsburgh district	19.00 to 19.50
St. Louis	16.00 to 16.50

LOCOMOTIVE TIRES

Chicago, No. 1	18.50 to 19.00
Chicago, cut	18.00 to 18.50
St. Louis, No. 1	16.75 to 17.25

LOW PHOSPHORUS PUNCHINGS

Chicago	17.25 to 17.75
Eastern Pennsylvania	19.00 to 20.00
Pittsburgh	20.00 to 20.50

Scrap

Little Change as Market Holds Former Position and Users Avoid Buying

CROSS currents are evident in the market in various localities. In the West demand is slack and supply heavy, prices being weaker. In other centers prices are little changed. Consumers continue to keep out of the market except for small lots and offerings are large from all sources. On the whole the price situation is not materially changed.

Chicago, April 6.—Heavy melting steel scrap has dropped to a range of $13.50 to $14 and appears heavy enough to go still lower. Consumers have been offered steel at $14, while dealers are able to buy just above $13.50. One interest believes $13.75 should be the top for steel, and the prediction has been made that $13 steel will be seen. Rerolling rails have been bought by a consumer at $16.50. Declines also have been registered in borings. arch bars and transoms, and No. 2 wrought. Oversupply of scrap continues a major factor in the present buyers' market.

Boston, April 6.—Trading in iron and steel scrap has shown more life although prices are still too low to permit shipment of much tonnage into Pennsylvania. Local consumers of heavy melting steel have taken moderate tonnages. The Boston & Albany railroad has opened bids on 1000 tons of miscellaneous scrap. The Boston & Maine railroad sold steel scrap at $12 shipping point.

New York, April 6.—Freer volume of supplies is being accompanied by an increased volume of demand, with a result that prices on scrap again are unchanged. There has been little fluctuation in more than a month. With one or two exceptions, trading is of relatively small tonnages but orders are more numerous.

Philadelphia, April 6.—Trading in iron and steel scrap has been quiet the past week, though cupola cast was sold rather extensively. The opening of the Pennsylvania railroad's list will place over 40,000 tons on the market.

Pittsburgh, April 6.—Several circumstances combined to make a quiet scrap market. Church holidays in the trade and total lack of interest on the part of buyers when steel mills are manufacturing more scrap. leave little room for new buying. Dealers are preparing bids against the Pennsylvania railroad's list, which closes this week.

Buffalo, April 5.—A sharp upward trend in scrap prices is noted this week. Dealers report having declined to sell heavy melting steel on offers fractionally under $16 and are holding for $16.50, in some instances higher. For the best grade steel up to $17 or even more is demanded. Assertions are made that a tonnage of ordinary steel would cost at least $16.

Cleveland, April 6.—Iron and steel scrap weakness continues in consequence of the uninterested attitude of consumers. However, prices have reached the point where some melters are feeling out the heavy melting steel market. While no tonnages have been moved the trade is somewhat more encouraged.

Detroit, April 6.—Further weakness is developing in the iron and steel scrap markets. Some distress tonnage is in evidence and dealers report difficulty in disposing of stocks on hand. New business is at a minimum, large consumers showing no interest in present offerings. Tonnage being moved is almost entirely on old orders and these are being cleaned up.

Cincinnati, April 5.—Buying of iron and steel scrap is virtually at a standstill, despite the fact that mills in this district are operating at a broader scale. However, consumers with contracts are accepting tonnages more liberally. Railroad malleable is slightly stronger because stocks are not plentiful. Specifications for heavy melting steel from mills in the Portsmouth district are heavier.

St. Louis, April 5.—Iron and steel scrap continues weak, with a number of additional price declines. Slightly more interest is appearing among melters and the general attitude is somewhat better. Some tentative inquiries have come out from mills, and one interest has purchased 2500 to 3000 tons. Railroad lists, which continue pretty large, have not elicited as brisk bidding as usual. Dealers are less inclined to speculate, and are buying only what they can apply on orders at a profit.

Birmingham, Ala., April 5.—While few, if any, cancellations have taken place, melters of old material in this section are not urging deliveries on contracts. The largest consumer of heavy melting steel has not been in the market recently and dealers are puzzled as to what this means. Quotations are unchanged for the past four weeks.

Sheets

Specifications and Orders Slower—Galvanized and Black Prices Easier

SHEET specifications and new purchases have declined, and the market for black and galvanized is easier. Seasonal conditions have interfered with demand for construction purposes. Operations are lower in the valley; the general average in the Pittsburgh district is 75 to 80 per cent. Blue annealed and full finished are firm.

SHEET PRICES, PAGE 948

Pittsburgh, April 6.—Some of the snap went out of sheet specifications last week compared with a few weeks preceding, according to representative manufacturers here. This is believed to be temporary and due primarily to weather conditions, particularly the heavy storms in the Middle West from which source much business is drawn. Bad weather has interefered greatly with the development of seasonal sheet demand. Specifications in March, however, were good and after this temporary lull they are expected to be better during the remainder of April. Operations still hover between 75 and 80 per cent, with different consuming lines buying sparingly as needed. Purchases everywhere are on a hand-to-mouth basis because of good delivery service. Large sheet buyers' inventories of full finished material are kept low. Others have from one to three weeks' stocks. The price is firm at 4.40c. Some concessions are noted in galvanized sheets but the quotable market still is 4.60c. Blue annealed is firm at 2.50c. On black sheets concessions are more numerous, several small manufacturers being anxious for tonange and to obtain orders had to go to 3.25c.

Boston, April 6.—Sheet sales in New England continue below the 1925 level. Galvanized sheets are firm at 4.60c, Pittsburgh, but sales lack vigor. Black sheets remain soft and sluggish.

Philadelphia, April 6.—The Pennsylvania railroad placed its second quarter sheet requirements during the past week. The tonnage is indefinite. Otherwise, sheet business is only fair. The largest eastern maker is operating full; another is around 75 per cent. Prices are firm.

Youngstown, April 6.—A lull in buying demand hit the district sheet market this week, slowing down operation slightly. Some producers have sufficient tonnage firm in hand to maintain hot mill schedules through this week while others, because of unbalanced specifications, will do away with the Saturday turn. Lack of buying interest has sharpened competition but the present dead spot in

the market has not interfered with the orderly manner of conducting business. No signs of price weakness is in evidence, especially outside of the Detroit district. Black sheets continue quotable at 3.25c to 3.35c, with many of the large producers holding to the maximum. Blue annealed is firmly established at 2.50c. While current entries of galvanized are thin, the price of 4.60c continues as the basis of transactions. Demand for high-grade tonnage has tapered off slightly. In the face of the lull, no holdups have been issued against business on the books. Specifications, however, are in smaller volume because of curtailed operation at some of the automobile plants in the Detroit district.

Chicago, April 6.—Black sheet demand has outrun galvanized and blue annealed but on account of the congested books on blue annealed, mill schedules are better balanced. Order mail has been unusually heavy the past few days and many consumers are asking for expansion of shipments about to be made. Western mills are operating practically at capacity. A great many orders reflect the increased opportunity for outdoor work. Sheets are unchanged at 3.50c, Chicago, for black, 2.65c for blue annealed and 4.75c for galvanized.

St. Louis, April 6.—Producers and distributors of sheets report decided improvement during the past week or ten days. While the demand is chiefly for immediate shipment, it comes from a broader variety of users, and has gained in volume. Bookings for the first time in some while are exceeding shipments. The leading producer has stepped up its operations to 89 per cent of capacity, and will continue at that rate for the next two weeks at least.

Tin Plate

Specifications Active—Mills Operating at 95 Per Cent

TIN PLATE PRICES, PAGE 748

Pittsburgh, April 6.—Tin plate mills still have heavy backlogs and specifications are active. The American Sheet & Tin Plate Co. put on eight mills at its New Kensington, Pa., works yesterday, bringing its average up to a fraction above 94 per cent. The general average for the district is 95 per cent. Makers are anxious to anticipate as much as possible and are shipping out heavily to equip their customers with large stocks before the hot summer months. The leading interest shipped out more hot mill products in March than any month so far this year. The tin plate price is unchanged at $5.50.

The United Shoe Machinery Corp., Boston, reports a net income of approximately $8,000,000 for the fiscal year ended February 28. This is close to a record figure for any year in the plant's history.

Strip Steel

Better Specifications on Hot and Cold With Firm Prices

STRIP PRICES, PAGE 948

Pittsburgh, April 6.—Slight improvement is noted in specifying on hot and cold-rolled strip steel. Orders for cold strips lag in some directions but this is more than made up by increased demand for hot in other directions. April promises to exceed March in shipments, bookings and output. Prices are unchanged on the quoted bases and operations are the same as they have been, 80 to 85 per cent.

Pipe

Mills Have Good Backlogs But New Business Is Lighter—Cast Buying in Good Volume

ORDERS for oil country goods continue to lead buying of tubular products from mills. Although makers have good backlogs of line pipe current demand is lighter. Cast pipe demand continues heavy. Two Massachusetts jobs requiring 4400 tons have been awarded an American maker. Newark, N. J., is in the market for 1200 tons high pressure pipe.

PIPE PRICES, PAGE 948 AND 986

Pittsburgh, April 6.—Large standard full weight merchant pipe orders still lag but small sales are developing in greater number. These usually involve one to three carloads at a time. Occasionally a pipe order involving five to 10 cars is noted but usually these apply upon oil country material and come from oil country jobbers or the oil companies themselves. Practically all producers now have good backlogs of line pipe business, gas or oil, and are facing the spring and summer with additional demand assured. They expect that before long they will be operating full against calls for expedited shipments. Prices are firm, except on seamless tubes where concessions still are being made.

New York, April 6.—Municipal inquiry for cast pipe, although less active than two or three weeks ago, is fairly well maintained. The United States Cast Iron Pipe & Foundry Co. has closed on three projects, involving 4700 tons. A feature is an inquiry for more than 1200 tons of high pressure pipe for Newark, N. J. The market is unchanged.

Chicago, April 6.—Cast iron pipe has been a shade less active in this market the past week but business over the past 30 days has compared well with that of a year ago. With most makers bookings about equal shipments. Backlogs are much longer on the smaller sizes than the larger ones. Milwaukee, which is just closing on 2400 tons and takes bids April 8 on 2000 tons, will be in the market April 15 for 1974 tons of pipe and 58 tons of fittings. The market is unchanged at $41 to $42, Birmingham, or $49.20 to $50.20, Chicago, on pipe 6 to 24-inches but on the larger sizes where there is competition $2 to $4 less is being done. Four-inch pipe is quoted at $53.20 to $54.20, Chicago.

Birmingham, Ala., April 5.—New lettings announced during the past week add materially to the unfilled tonnages of companies producing pressure pipe here. All plants are ready for capacity operation this spring.

CONTRACTS PLACED

2700 tons, centrifugal pipe, for Quincy, Mass., to United States Cast Iron Pipe & Foundry Co.
2000 tons, Milwaukee, to United States Cast Iron Pipe & Foundry Co.
2000 tons, Duluth, to American Cast Iron Pipe Co.
1700 tons, centrifugal pipe, Danvers, Mass., to the United States Cast Iron Pipe & Foundry Co.
750 tons, South Park commission, Chicago, to National Cast Iron Pipe Co.
700 tons, Berea, O., to James B. Clow & Sons.
300 tons, approximately, sand cast pipe, Atlantic City, N. J., to the United States Cast Iron Pipe & Foundry Co.
250 tons, Toledo, O., to James B. Clow & Sons.
240 tons, Midland, Mich., to James B. Clow & Sons.
235 tons, stock for Seattle, to American Cast Iron Pipe Co.
200 tons, Marshfield, Wis., to United States Cast Iron Pipe & Foundry Co.
200 tons, 8-inch class B and C pipe for Pacific coast city, to American Cast Iron Pipe Co.

CONTRACTS PENDING

1860 tons, plain, 115 tons, lugged pipe and 59 tons special castings, Milwaukee; bids in April 15. This is in addition to several tonnages previously reported.
1228 tons, 8, 16 and 20-inch high pressure, class E pipe and 66 tons of fittings, Newark, N. J.; bids close April 8.
739 tons, 24-inch class B pipe, Los Angeles, Spec. 790-B; American Cast Iron Pipe Co. low bidder.
304 tons, 6 to 10-inch class D pipe, Avalon, Calif.; bids in April 15.
188 tons, 10-inch class B pipe, North Sacramento, Calif.; bids in April 6.
100 tons, cast pipe, department of water supply, gas and electricity, New York; general contractors' bids opened April 6.

Imports More Varied

Philadelphia, April 6.—Following are the imports of iron and steel at this port for the week ended April 3:

1495 tons of pig iron, British India; 700 tons pig iron, Netherlands; 1100 tons pig iron, Germany; 579 tons iron ore, Germany; 221 tons structural iron, Belgium; 23 tons bars, Belgium; 19 tons of bar iron, Sweden; 20 tons charcoal rolled iron, Sweden; 9 tons hoop steel, England; 10 tons galvanized steel strips, England; 30 tons ferromanganese, England; 200 tons spiegeleisen, England; 3500 tons chrome ore. Portuguese East Africa; and 49 tons of steel blooms, France.

Bolts, Nuts, Rivets

General Buying Holds up Well on Bolts—Rivets Dull

NUT AND BOLT PRICES, PAGE 948

Chicago, April 6.—Backlogs of western bolt and nut makers have been sufficient to take up the slack in specifications, which has resulted largely from seasonal conditions. Implement manufacturers are taking out less material, as was expected but the automobile industry is holding up well. Second quarter contracting has been accompanied by little comment on prices, which are based upon 50, 10 and 10 off for large machine bolts. Specifications for small rivets are somewhat better. The market is quoted at 70 and 10 to 70 and 5 off, with accent on the former. Large rivets are unchanged at 2.75c.

Pittsburgh, April 6.—While specifications on nuts and bolts still are active, rivet makers find much to be desired. Orders for rivets are not sufficient to go around and some makers are not operating while others are operating part time. This condition makes for price weakness and levels below 2.60c continue to be developed. The nut and bolt price, however, is firm and jobbers and large users are taking fair lots for immediate use.

Iron Ore

Market Is Active—Furnaces Anxious For Early Shipments

Cleveland, April 6.—Selling of Lake Superior iron ore is active, though tonnages closed in the open market are not large. A St. Louis company that has been inquiring for 200,000 tons or more has not acted, and this is the largest individual lot pending. One company has taken orders for considerable manganiferous ore. Some blast furnace interests with low stocks are anxious to obtain ore as soon as possible, although the shipping season may not open before May 1 due to weather conditions.

March shipments from Lake Erie ports to furnaces amounted to 639,475 tons, 85,964 tons more than in February. The March, 1925, total was 932,460 tons. The season's shipments to April 1 this year, 29,579,834 tons, are 4,480,681 tons over the shipments for the preceding year.

Bars

March Tonnage Added to Mill Backlogs Even at High Production Rate

WITH production records broken in March Chicago mills ended the month with more tonnage on books than at the beginning, largely specifications, and no sign of lessened demand. Pittsburgh mills find some slackening of buying but continue to run full to meet requirements. Prices are steady, though some shading has been done at tidewater.

BAR PRICES, PAGE 948

Chicago, April 6.—Underlying conditions in the soft steel bar market appear sound. The two largest makers here have emerged from a record-breaking March with more tonnage on their books than a month ago. Specifications the first week of April were almost 50 per cent over those of the last week of March. Consumers' stocks are low, a big percentage of business on makers' books is represented by specifications and none of the larger consuming outlets displays signs of a major recession. Pittsburgh district competition is less marked and the soft steel bar market is firmer, with the general quotation at 2.10c, Chicago.

Fence post makers continue to take an unusually heavy tonnage of rail steel but bedmakers are tapering off. One Chicago Heights mill continues sufficiently well booked for double turn operations. Rail steel is quoted at 2.00c, Chicago, the same as bar iron.

Boston, April 6.—A marked improvement in bar sales developed at Boston during the past week. One of the leading dealers reported a total nearly double that of the previous week. The price holds firm at 2.00c Pittsburgh. Second quarter contracts are developing favorably.

Pittsburgh, April 6.—Merchant steel bar buying is not as extensive as it was although a steady stream of small orders continues to flow. A large number of customers have contracted second quarter needs although several producers note a few delinquents. Some of these have large carryovers from the first quarter. Bar mill operations continue high, the Carnegie Steel Co., the Jones & Laughlin Steel Corp. and one or two other independent mills running full. In the Mahoning valley, however, one maker is operating only about 70 per cent. Prices are firm, with 2.00c the ruling figure and 2.10c obtainable on small lots.

Philadelphia, April 6.—Although 2.00c, Pittsburgh, is the usual price for soft steel bars some shading has been done recently on attractive tonnages. It is not yet apparent how general this shading has become.

Cleveland, April 6.—After the heavy volume of tonnage in March which exceeded February 10 to 15 per cent with various mills, incoming business so far in April is keeping up strongly and there are no signs of any diminution of underlying demand. Reports are current of some suspensions of automotive parts business to enable builders to catch up on their stocks but inquiry in this district has failed to show any instances of this kind. On the contrary, one underframe manufacturer serving a large Detroit builder has received releases. Reports from Detroit show reduction of production by some builders which is substantially offset by increases in other directions, leaving the general situation little changed. Crane and shovel manufacturers in this territory all are doing an unusually large volume of business. Second quarter contracting is going slowly since many consumers are being supplied through extensions of first quarter tonnage. Prices are firm at 2.19c, Cleveland or 2.00c, Pittsburgh.

Cold Finished Steel

Producers Expect Present Average Demand to Continue

Pittsburgh, April 6.—Anticipating the summer will bring curtailment in consumption in some directions but an increase in others, cold bar finishers expect present satisfactory conditions to continue. Specifications are sufficient to maintain average operations around 70 to 75 per cent. Total business for first quarter exceeded first quarter of 1925 by 25 to 40 per cent in representative cases. No deviations from 2.50c are noted and demand is much diversified with automotive industries in the lead. Railroad buying is expected to improve.

Hoops and Bands

Automotive Orders Dominate Market and Others Assist

HOOP PRICES, PAGE 948

Pittsburgh, April 6.—Hoop and band orders from automotive and allied trade still are heavy. Other consuming lines are contributing fair business but buying everywhere is small and hand-to-mouth. The price remains unchanged at 2.50c, no divergence from that level being encountered.

Structural Shapes

Market Continues Spotty, Tonnage Aggregating Good Total But Consisting of Small Lots—Prices Are Unchanged

AWARDS of structural shapes continue mostly in small lots, but the aggregate is good and many mills have fair backlogs. Specifications at Chicago in March exceeded those of February by 50 per cent. March tonnage was far above that of 1925 and made a good total. Pending work is featured by an inquiry at Baltimore for a department store building taking 7500 tons. Awards are heavier this week, led by 4500 tons for New York subway work and 3300 tons for New York Central piles.

Competition on fabricated material continues keen, low prices developing where tonnages are attractive. Plain material quotations are steady at 1.90c to 2.00c, Pittsburgh equivalent, the minimum being the more common price.

STRUCTURAL SHAPE PRICES, PAGE 948

Pittsburgh, April 6.—A moderate increase in spot tonnage buying of structural shapes is noted by some mills. Fabricators still are undercutting one another in their bids and since small jobs predominate it takes a large number of them to satisfy these various shops. Prices below $75 per ton for material fabricated and erected have been developed. Plain material prices continue firm at 1.90c to 2.00c, with a large number of small jobs coming up each week.

Chicago, April 6.—March structural steel specifications exceeded those of February by 50 per cent and the March level has been maintained thus far in April. Fabricators generally are in better shape than a year ago and are comfortably booked. Competition is severe but not drastically so. An increase is noted in bridges and public work. Both the leading interest and the leading independent have substantially the same tonnage of structural business on their books as at the beginning of March, despite the record production in March. Firmness in Pittsburgh district prices is evidenced by lessened competition here. Beams are quoted at 2.10c, Chicago.

Boston, April 6.—Building projects are showing more life in New England. Contracts pending in the Boston district total 8000 or 10,000 tons. Prices are unchanged at 1.90c Pittsburgh on plain material.

New York, April 6.—Structural demand is featured by an inquiry for 7500 tons for a department store in Baltimore, and by the placing of 4500 tons for subway work in New York. Activity continues restricted for this season but it is far from dull. Plain shape prices are virtually unchanged at 1.90c, Pittsburgh, on the more desirable tonnages.

Philadelphia, April 6.—Structural shape prices continue to range from 1.80c to 2.00c, Pittsburgh, with 1.90c the average. Two leading eastern mills have schedules full, others can make early shipments.

Cleveland. April 6.—Award of the Halle Bros. Co. store addition taking 2700 tons was the predominant activity of the structural market last week. Some tonnage is being figured quietly. Plain material is firm at 1.90c to 2.00c, Pittsburgh or 2.09c to 2.19c Cleveland. Fabricated quotations still evidence much weakness.

Awards Compared

	Tons
Awards this week	36,246
Awards last week	13,833
Awards two weeks ago	23,603
Awards this week in 1925	19,055
Average weekly awards, March	36,528
Average weekly awards, 1926	26,673
Total awards to date, 1925	477,811
Total awards to date, 1926	382,993

CONTRACTS PLACED

4500 tons, subway section 1, Route 102, New York, through Moranti & Raymond, 42 Broadway, general contractors, to American Bridge Co.

3844 tons, involved in the following nine awards:

Theater and store building, New Rochelle, N. Y., to the Harris Structural Steel Co.

Theater, Summit avenue, Jersey City, N. J., to Eidlitz & Ross.

16-story apartment hotel, 48-58 West Seventy-second street, New York, to the Easton Structural Steel Co.

Factory addition for the Robert Gair Co., Pierpont, N. Y., to the Van Brunt Iron Works.

St. Aedens convent, Jersey City, N. J., to the Selback-Meyer Corp.

Parochial school, Java street, Brooklyn, N. Y., to the Reliance Steel Fabricators.

Loft building, 48-50 Fourth street, New York, to the Atlantic Structural Steel Co.

Lowe theater, New Rochelle, N. Y., to the Owego Bridge Co.

Hotel, 148-50 West Fifty-eighth street, New York, to the Easton Structural Steel Co.

3300 tons, New York Central viaduct piers, to Bethlehem Steel Co.

2700 tons, store building addition for Halle Bros. Co., Cleveland, to the American Bridge Co., John Gill & Sons, general contractors.

1675 tons, building for the Buckeye State Building & Loan association, Columbus, O., to the Jones & Laughlin Steel Corp.

8320 tons, involved in the following 13 projects: 20-story loft building, 144-54 West Thirtieth street, New York to the Hedden Iron Construction Co.

Miscellaneous work for the New York Union Post building, Front street, New York, to the Hedden Iron Construction Co.; Thompson Starrett, 250 Park avenue, general contractor.

St. Marys hospital, Jamaica, L. I., to A. E. Norton Inc.; Thomas O'Rilley, 415 Lexington avenue, general contractor.

Loft, between Forty-ninth and Fiftieth streets, on Eighth avenue, New York, to the George A. Just Co.; the Max J. Kramer Co., 1 West Forty-seventh street, general contractor.

Municipal court house, Bronx, New York, to the Levering & Garrigues Co.; Butler-Reisdorff Co., 120 East Fortieth street, general contractors.

15-story loft, 315 West Thirty-sixth street, New York, to Levering & Garrigues Co.;

8-story office, 337 Fifth avenue, New York, to Levering & Garrigues Co.; G. Richard Davis & Co., 30 East Forty-second street, general contractors.

10-story warehouse, 233-245 Spring street, New York, to Levering & Garrigues Co.; R. W. Smith Construction Co., 1457 Broadway, general contractor.

Service station for International Motors Co., Bridgeport, Conn., to the McClintic-Marshall & Co.; Muirhead & Son, that city, general contractors.

Warehouse for the Scarsdale Supply Co., Scarsdale, N. Y., to the McClintic-Marshall Co.; James Innes, that city, general contractor.

Garage for Anheuser Busch Co., Brooklyn, N. Y., to the McClintic-Marshall Co.; the Equity Construction Co., 25 West Forty-fifth street, general contractor.

Factory for the Clemson Saw Co., Middletown, N. Y., to the McClintic-Marshall Co.; H. H. Smith Inc., that city, general contractor.

Hospital, Elizabeth, N. J., to the McClintic-Marshall Co.; Mark C. Tredenick Co., that city, general contractor.

Hall of records, Newark, N. J., to the McClintic-Marshall Co.; Niewenhous Co., that city, general contractor.

1100 tons, nurses home, Columbia-Presbyterian hospital, New York, to the Taylor-Fichter Steel Construction Co.

1000 tons, apartment for Dwight P. Robinson & Co. Inc., Fifth avenue, New York, to Easton Structural Steel Co.

630 tons, factory for Wood Bros. Thresher Co., Des Moines, Iowa, to Truscon Steel Co.

600 tons, two bridges for the Western Maryland railroad, to the American Bridge Co.

500 tons, loft, Fulton street, New York, to the Paterson Bridge Co.

490 tons, Firestone Esley Rubber Co. building, Hartford, Conn., to Eastern Bridge Co.

450 tons, boiler house and sheet mill extension building, Sharon Steel Hoop Co., Sharon, Pa., to the Pittsburgh Bridge & Iron Works.

450 tons, Fabian building, West street, Boston, to Levering & Garrigues Co.

425 tons, machine shop addition for National Biscuit Co., Evanston, Ill., to American Bridge Co. R. C. Wieboldt Co., 1534 West Van Buren street, Chicago, contractor.

384 tons, Duncan-Goodell hardware store, Worcester, Mass., to Eastern Bridge Co.

350 tons, Palace of Fine Arts, building No. 9, sesquicentennial, Philadelphia, to Belmont Iron Works.

350 tons, highway bridge, Decatur, Ala., to Mt. Vernon Bridge Co.

300 tons, American Soda Fountain Co. plant, Boston, to Boston Bridge Works.

300 tons, storage building for Seneca Wire & Mfg. Co., Fostoria, O., to American Bridge Co.

275 tons, highway bridge at Scottsburg, Ind., to Rochester Bridge Co.

275 tons, 300 greasing racks for the Texas Co., to the Jones & Laughlin Steel Corp.

270 tons, theatre for the Mineola Theatre Inc., Mineola, L. I., to the Atlantic Structural Co.; Young & French, general contractors, 103 Park avenue.

265 tons, apartment house, Mason street near Sutter street, San Francisco, to Central Iron

Works.
230 tons, addition to public school No. 41, Queens, New York, to the American Fabricators; erection by Karl Koch; M. S. Kelley, general contractor, 824 Cassanova street.
200 tons, Rock Island bridge work, to American Bridge Co.
185 tons, highway bridges at Loman, Minn., through Minneapolis Bridge Co. to American Bridge Co.
175 tons, Rose of Lima school, Buffalo, to Kellogg Structural Steel Co.
173 tons, T. A. B. building, New Britain, Conn., to Eastern Bridge Co.
170 tons, library building for state college of agriculture, Brookings, S. D., to Crown Iron Works Co.
170 tons, manufacturing building, Foxboro, Mass., to New England Structural Co.
160 tons, theater, Chico, Calif., to Schrader's Iron Works.
160 tons, theater, Marysville, Calif., to Schrader's Iron Works.
150 tons, bridge for Florida East Coast railroad, to American Bridge Co.
150 tons, Central of New Jersey bridges, to McClintic-Marshall Co.
140 tons, two bridges for the Long Island railroad, New York, to the Harris Structural Steel Co.
130 tons, Gary-Mayer library for Northwestern university, Chicago, to Vierling Steel Works.
130 tons, Calumet power station of Commonwealth Edison Co., Chicago, to Vierling Steel Works.
130 tons, addition to Hood Rubber Co. plant, Watertown, Mass., to Boston Bridge Co.
125 tons, miscellaneous repairs, Lever Bros., Cambridge, Mass., to Boston Bridge Co.
115 tons, various railroad structural jobs, in Middle West, to Vierling Steel Works.
100 tons, department store addition for Meyer Bros., Paterson, N. J., to Albert Smith Sons Inc.; J. W. Ferguson, that city, general contractor.
100 tons, printing building for the Call Printing & Publishing Co., Paterson, N. J., to Albert Smith Sons Inc.; J. W. Ferguson, that city, general contractor.
100 tons, Gulf Coast Power Co., work at Corpus Christi, Tex., to Vierling Steel Works.
100 tons, Empire State Ice & Fuel Co. building, New York, to Eastern Bridge Co.
100 tons, store building at Forbes and Meyran avenue, Oakland, Pittsburgh, to the John Eichleay Jr. Co.
100 tons, Dollar Savings Bank building, Pittsburgh; D. T. Riffle, general contractor; bids being taken.
100 tons, building for the West End Savings Bank & Trust Co., Wabash avenue and Main street, Pittsburgh; bids being compiled.
100 tons, turntable, Louisville & Nashville railroad, to American Bridge Co.

CONTRACTS PENDING

10,000 to 12,000 tons, Savoy-Plaza Hotel, Fifth avenue, New York; new plans out shortly.
7500 tons, department store for the Hochschild Kohn Co., Baltimore; bids asked.
175 tons, gymnaisum for Luther college, Decorah, Iowa; pending.
135 tons, manufacturing building for Foster Machine Co., Westfield, Mass.; bids in.

(*Concluded on Page* 963)

Concrete Bars

Roadwork Projects Requiring Heavy Tonnages—Builders More Active

PENDING reinforcing work is heavier, augmented considerably by increasing activity of roadbuilders. Pennsylvania's highway department is taking bids on 90 miles. General construction work is more active although most projects involve only small tonnages. Prices in most districts reflect strength and steadiness.

REINFORCING BAR PRICES, PAGE 948

Chicago, April 6.—Reinforced concrete bar warehouses are distinctly optimistic over prospects and believe that business the next 45 days will be in excess of that of the entire first quarter. This springs largely from the approach of more seasonable weather, but an added factor is the volume of business which has been held back. Warehouse stocks of bars are fair but with mill rollings spread farther apart supplies are a more important consideration. Several large jobs, each involving about 1000 tons, are expected to break shortly. Competitive conditions are markedly sharp. Warehouses are quoting billet bars at 2.60c, while rail steel bar sellers are quoting 2.00c.

Boston, April 6.—Contracts continue few in the concrete bar market in New England. Inquiry shows marked improvement and prices hold firm.

Buffalo, April 6.—A good volume of reinforcing bar business is pending here but unfavorable weather conditions of the past six weeks have prevented building operations from advancing to a point warranting purchases of bars. Two new projects on which bids have been taken here within the past few days involve 950 tons of bars and numerous other lots are pending. Prices are firm and unchanged with 2.265c quoted on lots from mill and 2.75c quoted on local stock delivery lots.

Pittsburgh, April 6.—Attention of the concrete bar sellers this week is directed to the state highway department at Harrisburg, Pa., where bids are to be taken today on 90 miles of road work. Approximately 45 miles will come up April 20 and between 50 and 60 miles some time in May. Each mile takes about 25 tons. A large number of small jobs taking less than carload quantities is pending so that the aggregate tonnage before sellers is large. The price still is 2.00c to 2.10c.

Cleveland, April 6.—Concrete reinforcing bar sellers are more encouraged over the market outlook. Although current business is light due to a backward spring and labor strikes, heavier awards are expected before the end of April. New billet bars continue quoted 2.19c to 2.20c Cleveland or 2.00c Pittsburgh. Rail steel is steady and untested at 1.80c to 1.90c mill.

Awards Compared

	Tons
Awards this week	7,675
Awards last week	5,000
Awards two weeks ago	2,650
Awards this week in 1925	10,850
Average weekly awards, March	4,548
Average weekly awards, 1926	4,384
Total awards to date, 1925	93,602
Total awards to date, 1926	64,668

CONTRACTS PLACED

1800 tons, Bush Terminal building, Brooklyn, N. Y., to J. K. Larkin & Co.
900 tons, additional work for Hunts Point station of Consolidated Gas Co., New York, to McClintic-Marshall Co.
800 tons, Edgewater Gulf hotel, Biloxi, Miss., to American System of Reinforcing.
720 tons, Roosevelt high school, Chicago, to American System of Reinforcing.
420 tons, plant for Terminal Warehouse Co., Philadelphia, through Turner Construction Co., general contractor, to Jones & Laughlin Steel Corp. and Donner Steel Co.
380 tons, Andrea Holding Corp. building, New York, to Kalman Steel Co.
350 tons, warehouse for National Tea Co., Chicago, to Calumet Steel Co. L. Y. Mensch, 160 North LaSalle street, Chicago, general contractor.
250 tons, building for Pittsburgh Plate Glass Co. at Boston, to Concrete Steel Co.
250 tons, retaining wall, San Francisco, to Badt-Falk Co.
230 tons, Masonic home, Zenith, Wash., to Pacific Coast Steel Co.
225 tons, warehouse for the H. J. Heinz Co., Pittsburgh, to the Carlen Engineering Co.
220 tons, Masonic home, Zenith, Wash., to Pacific Coast Steel Co.
200 tons, building for Fidelity Mutual Life Insurance Co., Philadelphia, through Turner Construction Co., to Concrete Steel Co.
130 tons, subway work, route 102, section 2, New York, to McClintic-Marshall Co.
100 tons, Masonic temple, Tacoma, Wash., to Pacific Coast Steel Co.
100 tons, Washington Manor, Seattle, to Pacific Coast Steel Co.
100 tons, Cavalier apartments, Seattle, to Pacific Coast Steel Co.
100 tons, Cooper river bridge, Camden, N. J., to Kalman Steel Co.
100 tons, sequicentennial building No. 2, Philadelphia, to McClintic-Marshall Co.
100 tons, Notre Dame academy, Moylan, Pa., to Truscon Steel Co.
100 tons, Gordon apartment, Chicago, to Concrete Steel Co.
100 tons, Salvation Army building, Jersey City, N. J., to Joseph T. Ryerson & Son Inc.

CONTRACTS PENDING

2250 tons, 90 miles of Pennsylvania state highway road work; bids closed April 6 at Harrisburg, Pa.
500 tons, addition to F. N. Burt Co. building, Buffalo; bids to be taken this week.
450 tons, addition to Saskatchewan elevator, Buffalo; bids in.
400 tons, apartment, Portland, Oreg; pending.
250 tons, school at Eighty-second and Lyons avenue, Philadelphia; pending.
200 tons, highway bridge near Williston, N. D., for North Dakota highway commission, Bismarck, N. D.; bids in April 22.
200 tons, office building for Boston Gas Co., Boston; bids being taken.
200 tons, Western avenue pumping station, Chicago; bids in April 15.
190 tons, Kittitas reclamation project, Wenatchee, Wash.; bids in on first section April 29.
170 tons, school at Seventeenth and Folsom, Philadelphia; pending.
125 tons, school, Hazleton, Pa.; pending.
115 tons, highway bridge at Sanish, N. D., for North Dakota highway commission, Bismarck, N. D.; bids in April 22.
100 tons, Montague irrigation district, Calif.; bids in April 16.
Tonnage unstated, mechanical building, Case School of Applied Science, Cleveland; Wilbur Watson, architect, bids in April 12.

Rails, Cars

Pennsylvania Places 200 Locomotives—Car Buying Scattered —Roads Push Mills

AWARD of 200 locomotives by the Pennsylvania was the only activity of prominence in the railroad equipment market last week. Car buying continues scattered and small. The Pennsylvania is expected to close on 2000 auto cars this week. A Michigan road bought 350 cars from a Canadian maker. March car awards total 8995.

RAILROAD TRACK MATERIAL PRICES, PAGE 948

New York, April 6.—Car orders are more numerous, but with few exceptions are confined to relatively small lists. This also applies to new inquiry. Locomotive demand is featured by the placing of 200 by the Pennsylvania railroad. Award of the large car lists of the Pennsylvania is expected within the next few days.

An eastern importer is making a firm offer to a larger German maker on a tonnage of 80-pound rails for a Philadelphia district consumer. The importer received the following cabled reply to his inquiry: "Heavier than 40-pound rails cannot quote owing to international syndicate." This is regarded as an indication that German railmakers, at least, consider American business is affected by the international rail syndicate.

Domestic freight car awards in March aggregated 8995, as compared with 12,895 in February, and 8830 in January. The largest buyer was the Southern railway, which awarded 2850 cars to outside builders and gave contracts to its own shops for the erection of 525. Following is a comparative statement:

March	8,995
February	12,895
January, 1926	8,830
December	16,885
November	11,685
October	11,145
September	7,905
August	2,875
July	800
June	1,835
May	6,985
April	5,060
March	4,730
February	5,510
January, 1925	1,695
1923 total	103,487
1924 total	144,425
1925 total	77,110

Boston, April 6.—Buying of railroad material has improved at Boston during the week, contracts having been placed for $10,000 worth of frog and switch material, 400 or 500 tons of rails, and miscellaneous fastenings. The Boston & Maine plans a $2,000,000 switching yard.

Pittsburgh, April 6.—Light rail business in meagre. An effort is being made to stimulate the market price to $36, but sales still are noted $35.

Track accessory manufacturers are operating practically full having good backlogs and heavy shipments. Prices are firm, with a 3.00c minimum applying on small spikes and 2.80c on standard. The tie plate price is 2.35c.

Chicago, April 6.—While the pressure of western railroads for track material is a shade less severe, the mills look for capacity operations to June to satisfy specifications against contracts. Recent business in fastenings includes 2000 tons each of angle bars and tie plates, 4000 kegs of bolts and 8000 kegs of spikes. Tie plates range from $45 to $47, the former applying to business for western roads where competition is sharp. The Pennsylvania and the Chesapeake & Ohio, among other eastern roads, have placed fastenings here.

Western car builders have taken only a scattering of underframes and passenger cars. The Pere Marquette has gone into Canada and placed 350 cars with a builder at Hamilton, Ont.

Of the 30,720 cars placed in the first quarter 17,000 came from western roads.

Light rails do not reflect the improvement in the eastern markets and new business has been negligible.

ORDERS PLACED

American Tar Products Co., Pittsburgh, 50 8000-gallon tank cars, to Standard Tank Car Co.

Baltimore & Ohio, 100 caboose underframes, to Pressed Steel Car Co.

Birmingham Southern, 100 gondolas, to Tennessee Coal, Iron & Railroad Co.

Chicago, Rock Island & Pacific, five baggage cars, to the American Car & Foundry Co.

Commercial Solvents Corp., Terre Haute, Ind., 15 8050-gallon, 40-ton tank cars, to Standard Tank Car Co.

Damascus Mfg. Co., Cleveland, one 6000-gallon compartment tank car, to Standard Tank Car Co.

Glen Nina Tank Line, Buffalo, three 6000-gallon triple compartment tank cars, to Standard Tank Car Co.

Henry Bower Chemical Co., Philadelphia, one 10,050-gallon, 50-ton tank car, to Standard Tank Car Co.

Kendall Refining Co., Bradford, Pa., four 10,050-gallon, 50-ton tank cars, to Standard Tank Car Co.

New York Central, 10 passenger motor cars, to Standard Steel Car Co.

Pennsylvania railroad, two gasoline-electric passenger and baggage cars, to the J. G. Brill Co.

Pere Marquette, 350 automobile cars, to National Steel Car Corp.

Seaboard Air Line, 50 cabooses and 6 passenger-baggage cars, to American Car &

(*Continued on Page* 963.)

Wire

Late Spring Has Delayed Farmer Buying But Other Consumers Take Tonnage

WESTERN wire sellers feel the effect of unusual storm conditions that have delayed agricultural buying but manufacturers are taking tonnages freely. Contracts for second quarter have been made at full prices and specifications are steady. In the East some effect of European competition is being felt. Production continues at the recent rate.

WIRE PRICES, PAGE 948

Chicago, April 6.—Bad weather, probably the worst April opening in recent years, has militated against jobber buying of wire and wire products and the improvement noticed last week has not been maintained. Neither jobbers nor the mills doubt that healthy spring business will come once farmers can make their purchases. Specifications for manufacturing lines are holding up well but for reasons jobbing lines are expected to move relatively better. Mill operations still average about 60 per cent. Makers say prices are firm on the basis of 2.55c, Chicago or western mill,, for plain wire and 2.70c for wire nails.

Boston, April 6.—Wire products manufacturers are feeling the effect of foreign competition and operations show a slight letup. Demand for wire nails at Worcester is reported unchanged. Plain wire is quiet but the price holds at 2.65c Worcester.

Buffalo, April 6.—Wire demand has improved within the past two or three weeks. Sales of netting and cloth are fully up to the seasonal total of 1925 with prospects of stock replenishment orders soon. Prices have rallied after depression although competition for tonnage is keen and not all sellers have been getting absolutely full quotations, according to reports. Increased firmness has developed within the past ten days, however. Buffalo mill operation is estimated at slightly more than 80 per cent of mill capacity at the beginning of the quarter.

Pittsburgh, April 6.—Quiet continues in the wire products market, with only fair business developing. Several 60-day contracts with jobbers have expired and are being renewed at the full market prices, 2.50c on plain wire and 2.65c on wire nails. Manufacturers using wire have practically all signed up for second quarter needs and all are furnishing specifications. Operations average between 60 and 70 per cent.

Nonferrous Metals

Easiness in Stocks Has Bearish Effect on Metals and Prices Ease as Consumers Withdraw—Small Turnover Sets Market

Prices of the Week, Cents a Pound

	Copper, Electro delivered	Copper, Lake delivered	Copper, Casting refinery	Spot Straits Tin, N. Y.	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
Mar. 31	13.95	14.07½	13.30	63.37½	8.35	8.07½	7.10	27.00	18.25	35.00
April 1	14.00	14.12½	13.40	64.12½	8.35	8.10	7.17½	27.00	18.50	35.00
April 2	14.00	14.12½	13.45	64.00	8.35	8.10	7.20	27.00	18.50	35.00
April 5	14.00	14.12½	13.45	64.00	8.35	8.10	7.20	27.00	18.50	35.00
April 6	14.00	14.12½	13.40	63.75	8.35	8.10	7.17½	27.00	18.00	35.00

CLEVELAND, April 6.—Stocks broke and recovered and so did the nonferrous metal markets in the past week. However, at no time were great quantities of metals thrown on the market at cut prices comparable with the way securities were dumped. On the contrary most producers assumed the attitude that the stock market was not an accurate barometer of the business situation, and so they held, although most users as a matter of caution withdrew from the market. The result was that on a small turnover of metals the market was made mostly by a few small lots.

Copper—Some metal went below 14.00c, delivered, but the tonnages were mostly small and producers as a general thing held the bulk of their metal close to this figure. Some metal was sacrificed, partly by second hands, in order to move it by the end of March. Custom smelters also had some they wanted to turn over at that time. The first few days of April have found this market much firmer at 14.00c but not much business has been done. Shipments on old orders continue large and the leading brass mill reports greater orders on hand than a year ago.

Zinc—The price has been steady about 7.20c East St. Louis for several days though little business has been done between smelters and galvanizers. Such sales as are made are mostly for prompt shipment. Some metal sold about a week ago at 7.15c and then very little as the market eased, but as it became firmer a few days ago some business was done around the present level. Joplin zinc ore the past week was $47 a ton, unchanged, after a drop of $2 the previous week.

Tin—Business has been almost at a standstill the past few days with the London market closed on Friday and Monday. The market has been a little firmer after a dip. March statistics showed supplies still in a tight position, with world visible supplies 14,280 tons, the smallest in several years. Deliveries in this country last month were 6835 tons, not a large sum for March, but late arrivals held down the figure. Stocks and landing at the end of the month were 2640 in this country, and it was understood practically all of this was sold to users, so prompt metal continues at a premium.

Lead—A good tonnage has been sold in a quiet way lately, and smelters are well sold for April. The result is that though the bulk of the business has been done at 8.00c East St. Louis and 8.20c New York, prompt shipment commands a premium.

Aluminum—Prices are unchanged and shipments are running into large tonnages.

Amalgamated Convenes; Wages Discussed

Pittsburgh, April 6.—Approximately 150 delegates to the annual convention of the Amalgamated Association of Iron, Steel and Tin Workers convened this morning in the Eagles' Auditorium. Interest centers in the sliding wage scale.

Following an opening address by P. J. McArdle, Pittsburgh city councilmen, the convention went into executive session during which officers' reports and other reports were presented. Later in the week the report of the wage committee, in session since last Friday, will be presented.

Some plan probably will be worked out looking toward higher wages for hot mill workmen, since much dissatisfaction has developed with the low settlements based on recent selling prices of sheets.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
High brass	18.87½
Copper, hot rolled	22.50
Zinc, ga. 9 to 23 (100-pound base)	11.50 to 11.75
Lead full sheets (cut ¼c more)	12.25 to 12.75
Aluminum, bright flat, up to 10 gage	37.50
SEAMLESS TUBES	
High brass	23.50
Copper	24.25
RODS	
High brass (round ⅝ to 2½-inch)	16.62½
Naval brass	19.37½
WIRE	
Copper	16.25
High brass	19.37½

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	8.75
Chicago	9.25
Cleveland	9.25 to 9.50
HEAVY YELLOW BRASS	
New York	7.25
Chicago	8.00
Cleveland	7.00 to 7.50
ZINC	
New York	4.00
Cleveland	4.75 to 5.00
HEAVY COPPER AND WIRE	
New York	11.50
Chicago	11.00
Cleveland	10.75 to 11.00
RED BRASS BORINGS	
New York	8.25
YELLOW BRASS TUBING	
Cleveland	7.00 to 7.50
LIGHT COPPER	
New York	9.25
Chicago	9.00
Cleveland	9.75 to 10.00
LIGHT BRASS	
Chicago	7.25
Cleveland	6.25 to 6.50
ALUMINUM	
Clippings	20.00 to 22.00
Borings, Cleveland	13.50 to 15.00
Cast	18.00 to 21.00

Secondary Metals

Remelt aluminum No. 12	24.00 to 24.50
Brass ingot	11.75

Coke By-Products

Distillates In Good Demand And Firmer—Sulphate Specifications

New York, April 6.—Continued good demand, combined with a falling off in production, has given added firmness to light oil distillate prices. Ninety per cent benzol is holding at 24 cents works, in tanks, and 29 cents in drums; pure benzol 23 cents works in tanks, and 28 cents in drums; solvent naphtha and toluol 35 cents in tanks and 40 cents in drums, and commercial xylol 36 cents in tanks and 41 cents in drums.

Sulphate of ammonia is quoted nominally at $2.60, delivered, for domestic consumption and $2.60 to $2.65, port, in double bags for export. Spot demand is light, but specifications against long term contracts placed last year are coming out in heavy volume, with a result that there is no excess of stocks. Contract buying is not expected to set in much before the first of June.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contract
Pure benzol	$0.23	.....
90 per cent benzol	0.24	.....
Toluol	0.35	.....
Solvent naphtha	0.35	(nominal)
Commercial xylol	0.36	(nominal)
Phenol	0.22	0.22
Per Pound at Producers' Plants		
Naphthalene flakes	0.07	
Naphthalene balls	0.08	
Per 100 Pounds Delivered		
Sulphate of ammonia	$2.62½	.....

Coast Finds Trade Quiet

Most Inquiry and Buying in Small Lots—Strike Makes Threat of Interference

SAN FRANCISCO, April 1.—(*By Air Mail*)—March was the quietness month in the iron and steel market this year. During the past three weeks trading has been confined for the most part to lots of less than 100 tons, few large projects being closed on. Prospects, however, are encouraging and a number of jobs are coming up for figures soon. Prices are being well maintained with an upward tendency.

A number of union carpenters in San Francisco walked out this morning in protest against the American plan of operation. Members of other trade unions threaten to strike in sympathy with the carpenters. It is too early to tell whether the situation will have a serious effect upon general business conditions. Financial agencies are proceeding cautiously under the circumstances and are not prone to extend any large amount of credit.

Pig Iron And Coke

The largest inquiry for pig iron this year is current this week, the Southern Pacific Co. being in the market for 1000 tons of No. 1 foundry iron. No large sales were reported. The bulk of offerings is for small lots for prompt shipment. The Southern Pacific Co. has also closed on 150 tons of ferromanganese. Prices range from $110 to $112 a ton c. i. f. duty paid. Two boat loads of English coke, 7000 tons, arrived in San Francisco this week for distribution against prior contracts and 6000 tons were unloaded at Los Angeles. Pig iron prices remain unchanged from those quoted last week and are as follows:

Coast Pig Iron Prices

Columbia basic	$27.00 to 28.00
Columbia, No. 2 Fdry., San Francisco and Los Angeles	27.00 to 28.00
Anzan No. 1 (Chinese) 2.50 to 3.50 sil. Del. S. F.	25.50
Anzan No. 1 (Chinese) 2.50 to 3.50 sil. Del. L. A.	25.75
*Dutch	24.00
*Indian iron	24.25
*Belgian	24.00
German	24.00
*English (2.75 to 3.75 sil.)	25.00 to 26.00

*C.I.F. duty paid.

Bars, Plates And Shapes

Little interest is being displayed in mild steel bars and as far as can be ascertained only small lots were dealt in. Prices for this class of material continue around 2.35c c.i.f. Concrete bar awards this week aggregated 470 tons and included 250 tons for a retaining wall in San Francisco and 220 tons for the Masonic home at Zenith, Wash. Pending business is not of heavy proportions. Distributors in the Bay district believe the impending strike of union carpenters has been responsible for some of the falling off in new inquiries. Prices are firm.

Plate awards exceeded 1200 tons this week. Included among the awards was 600 tons for two 80,000-barrel oil tanks for the Wilshire Oil Co. in Los Angeles, 500 tons for a pipe line at The Dalles, Ore., and 180 tons for a pipe line at Tacoma, Wash. The fabricating trade is centering attention now on the San Diego line, involving about 13,000 tons, bids on which will be opened April 5. The only other large projects up for figures is the Spokane pipe line involving 320 tons, bids on which open today. Plate prices continue at 2.30c c.i.f. on ordinary offerings with 2.25c applying on heavy tonnages.

Although over 10,000 tons of structural shapes are up for figures or pending, awards recently have not been heavy. Contracts placed this week totaled but 600 tons, the largest project calling for 265 tons for an apartment house in San Francisco booked by the Central Iron Works. Bids are being received on 575 tons for the Kress building, San Francisco, and April 29 bids will be opened on 2750 tons for the Yakima irrigation project in Washington. The Judson Mfg. Co. was low bidder on the Armory roof, San Francisco, involving 410 tons. Prices appear firm at 2.35c c.i.f. although it is understood that 2.30c has been named.

Other Finished Material

Little improvement is noted in demand for cast iron pipe. Awards did not exceed 500 tons, Seattle placing 235 tons and 200 tons with the American Cast Iron Pipe Co. Bids will be opened April 5 for around 30,000 tons for the San Diego pipe line but the city may buy steel pipe. Pending business aggregated over 32,000 tons, new inquiries calling for 188 tons for North Sacramento and 304 tons for Avalon, Calif.

The only standard pipe award reported involved 150 tons for the Shell Oil Co., San Francisco, and was placed with Grinnell Co. Distributors report movement from stock as only fair.

Since the first of the year trading in sheets has been confined almost entirely to small lots, no large inquiries or sales being reported. Prices are firm at the established Pittsburgh base prices, namely 2.50c, 3.35c and 4.60c base on blue annealed, black and galvanized sheets respectively.

Northwest Holds Trade

SEATTLE, April 3.—General business conditions in the Pacific Northwest continue satisfactory. Buying appears more active with the advance of the season, building is still brisk and the lumber industry reports improvement. All indications point to a satisfactory demand for iron and steel products.

Bar, Plates and Shapes

Demand for bars is fairly steady, the local mill reporting the same operations as for several months. Business is in small tonnages, the bulk of business being in less than carload. The Pacific Coast Steel Co. has contracts for 220 tons of reinforcing for the Masonic home at Zenith, 100 tons for the Masonic temple at Tacoma, and for the Washington Manor and Cavalier apartments, Seattle, each about 100 tons. The largest project pending is for an apartment hotel at Portland, 400 tons. The jobbing trade is not buying heavily at present and no inquiry from foreign sources is reported. The local mill and eastern producers are quoting 2.35c, giving the local plant a slight advantage in the matter of delivery.

Plates and shapes are reported firm and steady at 2.30c and 2.35c respectively. For small tonnages the market is firm although several large plate jobs, recently awarded, were on a basis of 2.35c. No large plate contracts are pending. King Bros. Boiler Works, Portland, were low bidders for the new pipe line at The Dalles, Oreg., involving about 500 tons of plates, on a tender of $53,043. Shapes continue in steady demand but no large tonnages are immediately pending in this territory.

Pig Iron and Coke

The market is unchanged from a week ago. Foundries as a rule are well stocked and there is little interest in buying. Some imported coke is still afloat for the North Pacific.

Finished Materials

Wholesale jobbers report conditions more satisfactory. March business was considerably greater than February and buying is more active. Everything out of stock is in fair demand with prices unchanged and no immediate revision contemplated. Sheets, plates, small shapes and materials used in construction work are moving in increased volume.

Old Materials

The market is unchanged. Receipts of steel scrap are equal to demand prices being steady at $10.50 and $11 gross. Demand for cast iron is limited sales being in less than carload lots on a nominal basis of $17 gross.

British Steel Prices Regulated

Minimum Quotations on Plates and Shapes To Be Fixed By Agreement—German Mills Approve Principle of New Combine—Coal Situation Less Serious—Exports Declining

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, April 6.—(*By Radio*)—British steelmakers have announced their intention to regulate prices, the new plan applying to plates and shapes, minimum quotations on these products to be fixed by agreement. A report from Berlin states the participants in the proposed steel trust have agreed on the form of organization, as to principle.

A holiday period in Britain is retarding business. The coal situation is considered less menacing. Exports of pig iron from Middlesbrough are decreasing, although Americans continue to buy low phosphorus iron.

Competition from continental steelmakers in declining, except for semifinished material needed in South Wales. Belgian interests are offering steel beams in the British market £1 5s ($6.06) below the price of British beams, delivered. The market for tin plate is sluggish; prices of galvanized sheets are easier.

French domestic and export business has been reduced slightly. Brussels reports pig iron prices firm, steel weak. Belgian makers recently have taken orders for pig iron, steel rods and sheets for shipment to North and South America.

Low Prices Hurt All European Steel Markets

LONDON, March 25.—(*European Staff Service*)—The feature of the moment is the sudden and unexpected collapse of the Belgian franc which has completely disorganized continental iron and steel export business. The drop of the Belgian currency is ascribed to a hitch in negotiations for a loan which is actually destined to help stabilize the Belgian franc. It is quite possible the present occurrence is accidental and if the difficulties are overcome quickly and the franc regains its loss, the effect on outside business will not be of great importance. Furthermore, Belgian mills are well booked with orders and can accept only deliveries, except for Charleroi mills, which will seize the opportunity to book orders, but they are only gradually re-entering the market.

In great Britain, export markets are dull. Pig iron business is poor, but makers show no desire to reduce prices. Middlesbrough foundry pig iron is quoted at £3 10s ($16.95) for export. Competition from the Continent has been almost negligible for some time and recently foreign makers advanced quotations, which, to some extent, has strengthened the position of British producers. In semifinished material continental makers are meeting considerable competition from some British producers.

The tendency of the continental market is uncertain, while shipments under existing contracts are in many cases becoming further in arrears. In Belgium, some Charleroi makers have taken fairly important orders for merchant bars for Japan and British India at around £5 4s ($25.20) f.o.b. Antwerp. Great Britain continues to inquire for tonnages of billets. Belgian makers are experiencing keen

(*Continued on Page* 976)

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, April 5	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON	£ s d			Francs		Francs	£ s d	
Foundry No. 3, Silicon 2.50-3.00	$17.01	3 10 0*	$13.83	395	$13.87	365	$17.01	3 10 0
Basic	16.52	3 8 0	14.70	420	12.92	340	15.07	3 2 0
Basic-bessemer	18.59	3 16 6†	13.83	395	13.30	350	17.01	3 10 0
Hematite, Phosphorus 0.02-0.05	20.52	4 4 6	19.43	555	.....	...	18.23	3 15 0
SEMIFINISHED STEEL								
Billets	$26.73	5 10 0	$21.53	615	$20.33	535	$24.30	5 0 0
Wire rods	43.74	9 0 0	27.65	790	26.60	700	27.95	5 15 0
FINISHED STEEL								
Standard rails	$35.24	7 5 0	$27.13	775	$25.46	670	$29.16	6 0 0
Merchant bars	1.49c	6 17 6	1.16c	725	1.14c	670	1.17c	5 6 0
Structural shapes	1.33c	6 2 6	1.08c	675	1.01c	590	1.07c	4 17 0
Plates, ship, bridge and tank	1.52c	7 0 0	1.22c	760	1.12c	660	1.20c	5 9 0
Sheets, black, 24 gage	2.22c	10 5 0	2.18c	1,365	2.01c	1,180	2.64c	12 0 0
Sheets, galvanized, 24 gage, corrugated	3.44c	15 17 6	3.20c	2,000	4.00c	2,350	3.63c	16 10 0
Bands and strips	2.17c	10 0 0	1.42c	890	1.35c	795	1.54c	7 0 0
Plain wire, base	2.39c	11 0 0	1.86c	1,160	1.45c	850	1.54c	7 0 0
Galvanized wire, base	3.04c	14 0 0	2.52c	1,575	1.87c	1,100	1.98c	9 0 0
Wire nails, base	3.15c	14 10 0	2.08c	1,300	1.53c	900	1.76c	8 0 0
Tin plate, base box 108 pounds	$ 4.68	0 19 3	.....	...	.....	...	$ 6.56	1 7 0
Domestic Prices at Works or Furnace—Last Reported								Marks
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$17.01	3 10 0	$14.18	405(2)	$12.73	335	$19.55	85
Basic pig iron	16.28	3 7 0	14.18	405(1)	12.54	330	20.24	88
Furnace coke	3.65	0 15 0	5.39	154	4.18	110	5.06	22
Billets	26.73	5 10 0	19.25	550	19.95	525	27.37	119
Standard rails	1.63c	7 10 0	1.12c	700	1.01c	590	1.46c	140
Merchant bars	1.57c	7 5 0	1.12c	700	1.00c	575	1.41c	135
Shapes	1.44c	6 12 6	1.04c	650	1.00c	565	1.42c	136
Plates, ship, bridge and tank	1.55c	7 2 6	1.25c	780	1.08c	635	1.56c	150
Sheets, black, 24 gage	2.33c	10 15 0	2.16c	1,350	1.78c	1,045	2.24c	215
Sheets, galvanized 24 gage, corrugated	3.50c	16 2 6	3.24c	2,025	3.74c	2,200	3.96c	380
Plain wire	2.39c	11 0 0	1.84c	1,150	1.36c	800	1.85c	177
Bands and Strips	2.28c	10 10 0	1.39c	870	1.28c	750	1.63c	156

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 15s 0d ($3.65) f. o. b. Ferromanganese £15 5s 0d ($74.12) f. o. b. German ferromanganese £14 10s 0d ($70.47) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semifinished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

Machinery

Machine Tool Interests Find Second Quarter Buying Gets Away to Fair Start—Railroad Buying Takes on New Interest

TOOL builders and dealers have gone into the second quarter with misgivings as to the future. March proved a month of satisfactory business but indications during the last few days were that activity in April would be considerably higher. Thus far, however, orders have been fair and inquiry is good, although there is a strong disposition for buyers to postpone action. Railroad buying of shop equipment is beginning to assume more importance. The Nickel Plate railroad has just closed on the bulk of equipment needed to replace that lost in a fire at Frankfort, Ind., several weeks ago. With a disastrous fire at its Pitcairn, Pa., shops last week, the Pennsylvania is expected to call for replacement equipment shortly. Deliveries on tools are easier.

New York, April 6.—Tool buying is scattered and involves few outstanding lists. Railroads in this district are perhaps less active than in any time in several weeks. New York Central continues to close on a few scattered machines and the Norfolk & Western and the Erie have also been buyers, closing on a flue welder and double bolt cutter, respectively, both going to Manning, Maxwell & Moore Inc. However, the most railroads in this district are showing little interest. New York Central is inquiring for a 32-inch shaper and a 36-inch planer. In the Central West, Rock Island has closed on a 42-inch borer to the Niles-Bement-Pond Co. Pittsburgh & Lake Erie also has closed on a 100-inch boring and turning machine to the Niles company. The General Electric Co. continues a leading industrial buyer, recent orders including a 16-inch geared head lathe and a 6-inch vertical shaper for Schenectady, N. Y., and a 48-inch measuring machine for West Philadelphia, all going to the Pratt & Whitney Co.

Boston, April 6.—Sales continue fairly active in New England although sizeable lists are lacking. Boston dealers have placed 12 or 15 new tools during the week, and are working on inquiries for as many more. Tool manufacturers in the district report a slight easing off in orders, but production still is close to 80 per cent of capacity. The used tool market is quiet and prices are spotty and in some cases soft. A paper machinery manufacturer bought four or five tools for a tool room extension. A large grinder was placed in western Massachusetts and a planer and several shapers in the eastern part of the state.

Pittsburgh, April 6.—Many inquiries for one or two machines apiece have put in their appearance during the past fortnight, making the equipment trade here fairly optimistic concerning the outlook. From time to time these turn into orders. One nearby buyer last week purchased a motor-driven lathe, a universal cutter and tool grinder, as well as a drill press. Westinghouse Electric & Mfg. Co., is taking bids on its large second quarter list involving in excess of 30 machines, and shortly will commence buying. As noted last week, this list includes milling machines, lathes, grinders, radial drills, presses, etc. Pennsylvania railroad is expected to issue a list shortly on equipment to replace that lost in a fire at Pitcairn, Pa. shops last week.

Cincinnati. April 6.—While tool builders in this district are booking more business than for sometime, individual orders are small, but in the aggregate represent a satisfactory volume. The most active buyers are automobile manufacturers. Liberty Machine Tool Co., Hamilton, O., has received an order from a Detroit automobile concern for four planers. This company has been operating its plant day and night for six months, while several other manufacturers in the Hamilton district are operating on a broader scale. Cincinnati Planer Co., took orders for a 33-inch planer and a 24-inch machine. Builders of milling machines, drilling machines, lathes and shapers, also are getting more business. Inquiries are better.

Chicago, April 6.—Machinery dealers are going into April with mixed feelings. Many larger houses have experienced a good March and save for a slight decline in inquiry they look for a fair April. Dealers pushing special lines meet less sales resistance than those with standard tools. As a rule, larger manufacturing interests are relatively better buyers. The delivery situation becomes easier each week. One maker of shapers has advanced prices on three small sizes 5 per cent. Calumet Steel Co., Chicago, has placed a 20-inch shaper. Chicago board of education is inquiring for some small items of equipment, including a 20-inch sliding head upright drill. Illinois Central railroad has not yet taken action on equipment for its new shops at Paducah, Ky., but the buying of structural steel for this project brings action nearer. Chicago & North Western has added several tools to its recent inquiry. National Biscuit Co. is building a machine repair shop at Evanston, Ill., and probably will be in the market for equipment.

Cleveland, April 6.—With most dealers tool sales during the past week have shown some improvement, although in one or two cases, business has not been closed as expected. Cleveland interests shared well in the purchase at Toledo, O., of equipment by the Nickel Plate railroad which is replacing that destroyed several weeks ago when its Frankfort, Ind., shops burned. A turret lathe went to a Cleveland manufacturer and a large boring mill is understood to have gone to the Niles Tool Works. Additional equipment is pending. Recent orders taken by Pratt & Whitney Co. in this territory include four profiling machines for Lock Pattern Works, Detroit; 10-inch thread miller for Timken-Detroit Axle Co., Detroit; production hand miller for Machines Special Co., Ann Arbor, Mich.; 20-inch geared head lathe for United States Aluminum Co., Cleveland; and 10 x 60-inch thread miller for Haughton Elevator Co., Toledo, O.

CRANE ORDERS PLACED

Four 25-ton locomotive cranes for Baltimore & Ohio railroad, to American Hoist & Derrick Co.

Two or three cranes, including one 20-ton and one 30-ton, for Chicago plant of McClintic-Marshall Co., Pittsburgh, to Harnischfeger Corp.

Two standard cranes with several special cranes, hoists, etc., for Chicago plant of McClintic-Marshall Co., Pittsburgh, to Shaw Crane Works.

Two 12-ton crawler cranes for Larocca Construction Co., New York to Link-Belt Co.

25-ton locomotive crane for Minnesota & Ontario Paper Co., International Falls, Minn., to American Hoist & Derrick Co.; 5-ton electric crane for Barenzelli Cast Stone Co., Woodside, L. I., to Northern Engineering Works; 3-ton electric crane for Mott Haven Iron Works, New York, to A. D. Granger Co.; 1-ton single I-beam crane for New Jersey Zinc Co., New York, to A. D. Granger Co.; 75-ton electric crane for Long Island Lighting Co., through E. L. Phillips & Co. to Cleveland Crane & Engineering Co.; 10-ton single I-beam handpower crane for Phoenix Utility Co., New York, to Chisholm-Moore Mfg. Co.; 20-ton handpower crane for E. Atkins & Co., New York, for shipment to Cuba, to Northern Engineering Works; 25-ton locomotive crane for Pittsburgh & Lake Erie raliroad, to Browning Crane Co.; 20-ton used locomotive crane for Enoch Johnson & Co., Nazareth, Pa., to Philip T. King; 5-ton roll shop crane for Pittsburgh Crucible Steel Co., Midland, Pa., to Cleveland Crane & Engineering Works; 10-ton crane for Columbia Steel Co., Butler, Pa., reported awarded to northern Ohio crane builder.

CRANE ORDERS PENDING

10-ton, 3-motor crane for municipal sewage disposal plant, Philadelphia; pending.

5-ton crane for Sharon, Pa., interest; bids being compiled.

One large ore bridge for Carnegie Steel Co., Homestead, Pa.; bids being taken.

One railroad ditcher, and two locomotive cranes, one 40-ton and one 25-ton, for Southern Pacific Co.; bids asked.

Many Records

Broken by Chicago District Works in March—Operations at Peak

Chicago, April 6.—It is understood that more than 30 separate production records were broken by the Illinois Steel Co. in March. Taking the company's total outputs at its Gary, South Chicago and Joliet works it never turned out more finished steel in one month. The Inland Steel Co. also set a number of monthly records. The Calumet Steel Co. in March turned out more rail steel on a single-turn basis than in any month in history.

Steel ingot operations in the Chicago district are holding at about 95 per cent. Apparently they have reached their peak in the present rise, but signs of a decided tapering off are lacking. The active list of steel works blast furnaces still totals 29 out of 35. The merchant stack active list is 8 out of 10, with the Thomas stack at Milwaukee slated for relighting about April 20. The fourth Inland Steel Co. steel works stack at Indiana Harbor has been delayed and May 1 is the date now set for its lighting.

Stack Breaks Record

Chicago, April 6.—No. 2 blast furnace of the Youngstown Sheet & Tube Co. at Indiana Harbor, Ind., the new stack which was placed in operation in March, 1924, last month established a new record with an average production of 790 tons per day. No scrap was used in the charge and coke consumption was said to be remarkably low.

Rod Extra Eliminated

Pittsburgh, April 6.—Under a change put into effect this week by leading mills, all extras for sizes on wire rods have been eliminated and the flat price now is $45, Pittsburgh and Cleveland and $46, Chicago. Up to two or three weeks ago an extra of $2.50 per ton was named on sizes over ⅜-inch. At that time this extra was reduced to $1.50. Now it has been eliminated entirely. This extra for size on wire rods has applied for a number of years.

Reports on Trackwork

New York, April 6.—The American Iron and Steel institute reports that production of trackwork in 1925 amounted to 170,564 net tons. This includes switches, switch stands, frogs, crossings, guard rails and appurtenances made from carbon steel, manganese steel or other metals for both domestic and export use in track of 60 pounds per yard and heavier.

Valley Pig Iron Down

(*Concluded from Page* 949)

ers. Typical of this situation is the placing of about 100 tons of iron each week, for several weeks past, by a Wisconsin interest. Future buying also shows some improvement. Some interests look for an adjustment, if any, in the Chicago market to reflect conditions in the markets to the East. Intrinsically, the Chicago furnace quotation of $23 for No. 2 foundry and malleable appears stronger, for one reason because it has been maintained through a period of doubt. If there is any trend in the melt it is downward, but not to any appreciable extent. Eight of the 10 merchant stacks here are active and the ninth—the Thomas stack at Milwaukee—is slated to go in about April 20. Neither consumers nor producers have any stocks. Fair activity in silvery irons is reported, with a purchase of 300 tons by a Wisconsin user. The schedule apparently was maintained. Charcoal activity has comprised several carload sales.

Cincinnati, April 6.—Purchase of 8000 tons of northern foundry iron by the Standard Sanitary Mfg. Co., for its Louisville, Ky., for second quarter delivery was the outstanding feature of the pig iron market here the past week. The tonnage which was divided between two furnace interests in the Ironton district will be shipped by water. While the price was not divulged, it is understood that the buyer paid less than $21, furnace. The Minister Machine Co., Minister, O., closed for 300 tons of northern iron for prompt shipment. The Hooven, Owens, Rentschler Co., Hamilton, O., is inquiring for 1500 tons of two grades of northern iron for second and third quarters. The Louisville Car Wheel Co., Louisville, Ky., wants 300 tons of northern iron. One furnace interest in the Ironton district produced 9500 tons last month and shipped 1300 tons. Prices are unchanged with northern iron quoted at $20.50 to $21, Ironton, and southern iron $21.50 to $22, Birmingham.

St. Louis, April 6.—Slightly more interest is manifested in the pig iron market and sellers look for a revival of buying during the next 30 days. A hopeful sign was the first transaction for third quarter. This consisted of 400 tons purchased by an Illinois stove manufacturer. In addition there were several inquiries for small tonnages to be delivered during that period. The only sale of consequence for second quarter is 700 to a car wheel maker in this district, placed with the St. Louis Coke & Iron Co. This producer sold smaller tonnages aggregating 500 tons and approximately 800 tons was sold by other agencies. Chicago sellers have shaded $23 to users in this district. Southern iron is quoted at $22, furnace, but better than that can be done. The leading local producer, while still quoting $23.50 to $24, f.o.b. Granite City, is meeting competition.

Birmingham, Ala., April 6.—Moderate selling for second quarter continues in the pig iron market. No. 2 foundry is quotable at $22. for second quarter, and $23 for small, prompt lots. Melters are asking for steady delivery and inquiries have been frequent during the past few weeks, including a few for third quarter.

Rail Equipment Active

(*Concluded from Page* 958)

Foundry Co.
Standard Steel Car Co., Pittsburgh, three 10,050-gallon, 50-ton tank cars, to Standard Tank Car Co.

LOCOMOTIVE ORDERS PLACED

Alton & Southern, one locomotive, to the American Locomotive Co.
Georgia, Florida & Alabama, two locomotives, to the Baldwin Locomotive Works.
Pennsylvania, 200 , 175 to the Baldwin Locomotive Works, and 25 to the Lima Locomotive Works, Inc.

ORDERS PENDING

Anglo-Mexican Petroleum Co., ten tank cars; bids asked.
Central of Vermont, 200 box cars; bids asked.
Cordoba Central, Argentina, 250 steel box cars; bids asked.
Philadelphia & Reading, 25 coaches and 5 combination passenger cars; pending.
Southern, 500 flat car underframes; pending.
Youngstown Sheet & Tube Co., 20 gondolas; pending.
Southern railway, 500 flat car underframes; pending.
Texas & Pacific, 300 automobile cars; pending.
Chicago, Burlington & Quincy, 500 coal cars; action expected immediately.

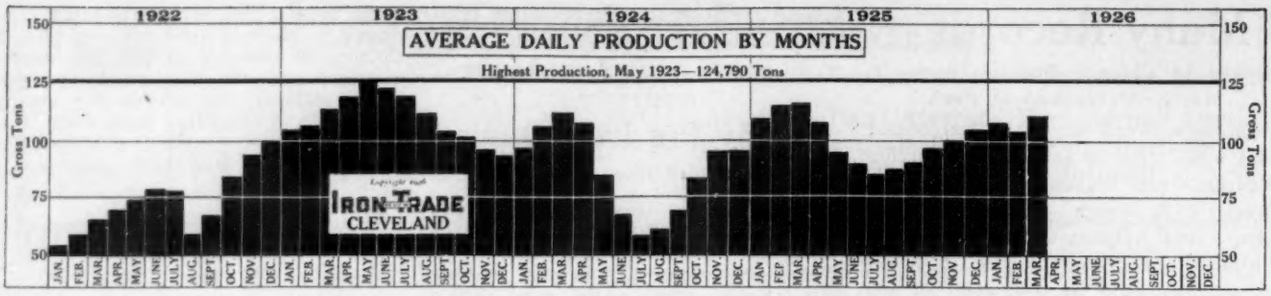
LOCOMOTIVE ORDERS PENDING

Boston & Maine, one to five diesel electric locomotives; pending.
Detroit & Toledo Shore Line, six locomotives, including three switch engines; bids asked.
Great Northern, one oil-electric locomotive; pending.
Kentucky & Indiana Terminal, 11 locomotives; bids asked.
Union railroad, 10 switch engines; bids asked.

Structural Awards Many

(*Concluded from Page* 957)

2253 tons, North Dakota highway commission, Bismark, N. D. 990 tons for bridge at Sanish and 1263 tons for bridge near Williston; bids in April 22.
2000 tons, office building for Boston Gas Co., Boston; bids being taken.
1500 tons, office building for Stone & Webster Corp., Boston; bids being taken.
1100 tons, sesquicentennial building, Philadelphia; bids asked.
1100 tons, Pittsburgh Insurance Exchange building, Pittsburgh; bids being tabulated in Washington office of the Boyle-Robertson Co., general contractor.
1600 tons, bridgework for Burlington railway; bids entered.
1000 tons, bridge at Providence, R. I.; bids being taken.
575 tons, Kress building, San Francisco; bids being received.
500 tons, Free Art building, West Eighty-seventh street, New York; bids asked.
500 tons, power plant addition, Potomac Electric Power Co., Washington; pending.
500 tons, gynasium and field house for Oak Park and River Forest high schools, Chicago. Childs & Smith, 720 North Michigan avenue, Chicago, architects.
410 tons, armory roof, San Francisco; Judson Mfg. Co. low bidder.
400 tons, office for Reading Co., Philadelphia; Erwin & Leighton, general contractors.
300 tons, International Harvester Co. plant at Albany, N. Y.; pending.
300 tons, pumping station, Philadelphia; bids asked.
300 tons, subway work for the New York Central, Erie, Pa.; pending.
275 tons, state dam at Rocky Riff, N. Y.; pending.
250 tons, plant additions for Landers, Frary & Clark, New Britain, Conn.; pending.
200 to 300 tons, mechanical building, Case School of Applied Science, Cleveland; Wilbur Watson, architect, bids in April 12.



Iron Production Is Best in 12 Months

ACTUAL production of pig iron in March amounted to 3,458,171 gross tons, or 111,554 tons per day, according to complete returns from operating blast furnaces in the United States. Iron making thereby rose to a level which on the basis of both total output and daily average was

MONTHLY PRODUCTION

	1926	1925	1924
January	3,819,789	3,372,207	3,015,489
February	2,923,850	3,214,067	3,073,619
March	3,458,171	3,571,422	3,465,389
April		3,211,235	3,226,107
May		2,933,907	2,619,986
June		2,679,045	2,022,836
Total 1st half..	9,701,801	18,981,883	17,423,417
July		2,665,262	1,783,457
August		2,707,171	1,882,986
August		2,707,171	1,882,986
September		2,725,885	2,053,617
October		3,017,889	2,461,727
November		3,023,257	2,514,979
December		3,249,057	2,956,389
Total 2nd half....		17,388,521	13,653,155
Grand Total ..	9,701,801	36,370,404	31,076,572

the highest since March of last year. Although the preliminary figures published in last week's issue of IRON TRADE REVIEW included estimations of three or more days production for each furnace, the indicated total was remarkably close to the actual figure. As was reported a week ago, active blast furnaces on the last day of the month was 235, an increase of 12.

As compared with the February output of 2,923,850 tons, the March iron production was a gain of 534,321 tons. Average daily production showed a gain of 7131 tons per day, or 6.7 per cent over the 104,423-ton daily rate of February. Iron was made in March at the rate of 40,700,000 tons per year and at 89.5 per cent of the country's record production of 124,790 tons per day in May, 1923.

During the month 7 merchant furnaces were blown in and 4 were blown out or banked. One of those blown in was the rebuilt Troy, N. Y., furnace of the Hudson Valley Coke & Products Corp., on March 29, while one of those blown out was the No. 2 Woodward, Ala., stack of Woodward Iron Co., wrecked by explosion, March 20. Of the nonmerchant class, 11 were blown in and 2 blown out. As reported last week, 5 furnaces were removed from the country's list of serviceable stacks, bringing the total to 377.

Furnaces blown in during March were: In Ohio: Mattie, A. M. Byers Co.; one Lorain, National Tube Co.; Upson, Bourne-Fuller Co.; one Ohio, Carnegie Steel Co. River Nos. 1, 2 and 4, McKinney Steel Co. In Pennsylvania: Bethlehem A, Cambria E and J and Coatesville A, Bethlehem Steel Co.; Clinton, Clinton Iron & Steel Co. In New York: Troy, Hudson Valley Coke & Products Corp. In Maryland: Maryland B, Bethlehem Steel Co. In Alabama: Ensley No. 3, Tennessee Coal, Iron & Railroad Co. In Wisconsin: Mayville No. 1, Youngstown Sheet & Tube Co. In Illinois: One Federal, By-Product Coke Corp.; South Works Old No. 4, Illinois Steel Co.

Stacks blown out during the month were: In Pennsylvania: Shenango No. 1, Shenago Furnace Co. In Tennessee: Cranberry, Cranberry Furnace Co. In West Virginia: Top, Wheeling Steel Corp. In Alabama: Ensley No. 3, Tennessee Coal, Iron & Railroad Co.; Woodward No. 2 Woodward Iron Co. In Wisconsin: Thomas, Thomas Furnace Co.

Active Blast Furnaces

	In blast	Total	Per Cent
March	235	377	62.4
February	223	382	58.5
January	225	385	58.5
December	234	385	60.7
November	220	385	57.2
October	209	386	54.1

AVERAGE DAILY PRODUCTION

	1926	1925	1924	1923	1922
Jan.	107,089	108,781	97,273	104,136	53,090
Feb.	104,423	114,788	105,987	106,925	58,220
Mar.	111,554	115,207	111,787	113,664	65,674
Apr.		107,041	107,537	118,210	69,005
May		94,642	84,515	124,790	74,495
June		89,301	67,427	122,262	78,748
July		85,976	57,531	118,860	77,517
Aug.		87,328	60,741	111,254	58,408
Sept.		90,862	68,454	103,917	67,466
Oct.		97,351	79,410	101,375	84,827
Nov.		100,775	83,832	96,373	94,870
Dec.		104,808	95,367	93,952	99,468
Ave.	107,798	99,645	84,908	109,659	73,563

DIVISIONS OF PRODUCTION

1925	Merchant	Non-merchant	Spiegel	Ferro-manganese	Other ferro
Jan.	659,256	2,712,951	5,418	23,564	956
Feb.	661,415	2,552,652	4,910	19,796	848
Mar.	736,284	2,835,138	5,449	24,422	877
April	689,162	2,522,073	5,341	21,448	799
May	605,347	2,328,560	5,294	22,717	298
June	563,782	2,115,263	4,972	19,834	.....
July	609,741	2,055,521	5,074	16,614	.....
Aug.	588,330	2,118,841	4,940	18,818	.....
Sept.	569,219	2,156,666	5,162	18,381	140
Oct.	606,092	2,411,797	5,071	21,472	1,544
Nov.	638,214	2,385,043	6,370	27,202	1,665
Dec.	664,681	2,584,376	7,746	25,881	1,883
Total	7,591,523	28,778,881	65,747	260,149	9,010
1926					
Jan.	724,946	2,594,843	7,746	32,924	1,607
Feb.	622,121	2,301,729	7,084	22,309	1,464
Mar.	733,321	2,724,850	7,339	24,064	1,942

MARCH PIG IRON

	No. of stacks	No. in blast last day of month Mar.	Feb.	Total tonnage made Merchant	Nonmerchant	—Totals— Mar.	Feb.
Ohio	69	52	45	168,041	630,999	799,040	662,502
Pennsylvania	134	85	81	155,127	1,082,567	1,237,694	1,015,684
Alabama	35	24	25	117,635	124,411	242,046	226,687
Virginia	17	1	1	7,785	.....	7,785	4,223
New York	26	18	17	94,429	139,287	233,716	201,653
New Jersey	4	0	0	.....	.....	.....	.....
Illinois	25	18	16	101,840	222,382	324,222	250,517
Colorado	5	3	3				
Indiana	17	16	16	42,218	417,163	459,381	411,031
Maryland	6	6	5				
Wisconsin	5	2	2				
Kentucky	7	1	1				
Tennessee	13	2	3	15,047	38,929	53,976	55,773
Utah	1	1	1				
West Virginia	4	1	2				
Michigan	4	3	3				
Minnesota	3	2	2	21,918	45,048	66,966	64,923
Missouri	1	0	0				
Texas	1	0	0				
Spiegel and ferro—all states	....	....	....	9,281	24,064	33,345	30,857
Total	377	235	223	733,321	2,724,850	3,458,171	2,923,850

Will Build New Strip Mill at Weirton

An appropriation of $5,000,000 has been authorized by the directors of the Weirton Steel Co. for the construction of a new strip mill at Weirton, W. Va. Foundations will be started between April 15 and 20. This expenditure is in addition to the $15,000,000 expansion program announced last year. All construction, grading, excavating and concrete work will be done by the company. Contracts for the strip mills have been awarded to the United Engineering & Foundry Co., Pittsburgh.

Additions to the present open-hearth department, which are a part of the recently announced expansion program, will include four 100-ton basic furnaces. Foundations for the new units were completed last week; erection of the structural steel building was started this week. The first of the new furnaces is expected to make its initial heat in August. A new coke plant including 49 by-product ovens is being erected by the Koppers Co., Pittsburgh. Foundations for the company's new 800-ton blast furnace now are completed and erection of the stack will start within the next ten days. Contracts for building the furnace and the stoves recently were awarded to W. B. Pollock Co., Youngstown, O.

Mill Contract Awarded

Morgan Construction Co., Worcester, Mass., has been awarded a contract for billet and rod mills for the South works of the American Steel & Wire Co., Worcester, which is to be entirely replaced by a new plant. Production will not be interrupted by the change, which is being made to decrease production cost and improve quality. Output will not be increased. Electric motors will replace the present steam motive power.

Blooming Mill Is Moved

Pittsburgh, April 6. —The 34-inch, 2-high, one-stand reversing blooming mill at the old plant of the Pardee Steel Corp., Perth Amboy, N. J. has been dismantled and with the auxiliary equipment, is being shipped here for reassembling at the Park works of the Crucible Steel Co. of America.

India Raises Tin Duty

Washington, April 6.—A bill providing for an increase in the import duty on tin plate from 65 rupees to 85 rupees a ton has been passed by the British Indian legislative assembly, according to a cablegram received by the department of commerce from Trade Commissioner Charles B. Spofford, at Calcutta. The bill becomes effective upon the approval of the governor general.

Simplify Household Sheet Metal Products

Washington, April 6.—Groups representing producers, distributors and users of household sheet metal ware, at their meeting March 12 with the simplified practice division of the department of commerce, voted to reduce by 25 per cent the varieties and sizes of utensils in common use. This action followed the work of two simplification committees of the industry for more than 18 months. The simplification is to become effective immediately.

The reductions are as follows: Deep stamped ware, 79 out of 283 eliminated; shallow stamped ware, five out of 107; pieced tin ware, 91 out of 301; heavy tinware, nine out of 52; japanned ware, 45 out of 180; and galvanized ware, 52 out of 231.

Some discussion developed from the proposal of Stephen S. Tuthill, American Zinc institute, that the term "zinc coated" be substituted, as more descriptive, for the term "galvanized." It was voted to refer the question to the Sheet Metal Ware association.

The standing committee to observe the operation of the simplified program consists of the following:

Warren S. Smith, Sheet Metal Ware association, and Walter H. Blank, American Can Co., representing the manufacturers; T. J. Fernley, National Hardware Association of the United States; Herbert P. Sheets, National Retail Hardware association; and John Donnan, Southern Hardware Jobbers association, the last three representing the distributors.

Japan To Revise Tariff

Washington, April 6.—Reports received here indicate that the measure calling for a general revision of the Japanese customs tariff may become effective April 1, and that the import duty on steel bars, rods and tees will be raised from 15 per cent ad valorem to 1.10 yen per 100 kin. Rails and fishplates are to be increased in duty from 15 per cent ad valorem to 0.95 yen per 100 kin, and wire rods from 15 to 18 per cent ad valorem. The duties on electrical sheets and pig iron are to remain unchanged.

Make Arguments Against Metric System

Washington, April 6.—Arguments against the bill for the metric system of weights and measurements in the United States were presented last week by representatives of the machine tool industry to the house committee considering the bill. The committee is said to be largely against reporting the bill to the house. Claims that the compulsory adoption of the measure of the metric system in this country would result in the expenditure of billions, and that this extra cost largely would have to be passed on to the buying and consuming public were made by representatives of the machine tool and other industrial interests.

A. C. Cook, Warner & Swasey Co., Cleveland, pointed out that it would be necessary if the metric bill becomes a law for each machinist to refit himself with the tools he owns at an estimated expense of $200 to $250 for each workman. It was said by the witness that the immediate cost to the company's plant to make the changes in gages and tools would approximate $100,000. To make the changes necessary in the drawings, an outlay of perhaps $750,000 also would be entailed. Finally, he said, no definite results would be obtained that would benefit the buyers of the firm's products.

E. C. Peck, Cleveland Twist Drill Co., who was in charge of the gage section of the army ordnance department during the war, declared that the existing English system of weights and measures is no detriment to the exportation of American machinery products to foreign countries using the metric system and adoption of a metric unit would not increase sales to these countries.

E. F. du Brul, National Machine Tool Builders association, Cincinnati, declared that accuracy of measurement affects the progress of industry and not the method of measurement.

Alfred W. Att, John B. Att Co., machine tool builder, Baltimore, pointed out that it would be necessary for manufacturers to carry double stocks, considering the fact that a demand still would exist for products made under the present standards of measurement.

David Van Alstyne, assistant to the president, American Locomotive Co., pointed out that foreign sales of American goods are based on prices and quality and not on dimensions of measurement under which such goods are produced.

Book Reviews

(*Concluded from Page* 933)

cal mathematics, the principles set forth have been checked and verified by experimental data and by actual results in practice.

Following a detailed discussion of both natural and forced draft, a development of theory on a mathematical basis and a study of losses encountered, Mr. Mingle considers the general subject of combustion. The chemistry of this reaction is given only as incidental to the mechanics, thus giving the basis for the theory of capacity, the relation of chimney area and height to proper combustion. While written primarily for designers and builders of chimneys, this work will be valuable to plant engineers, mechanical superintendents and others responsible for new construction or the revision of existing chimney structures.

* * *

Consumer Buying Studied

Profits; by William Trufant Foster and Waddill Catchings; cloth 465 pages, 5¼ x 8 inches; published by Houghton Mifflin Co., Cambridge, Mass. and supplied by IRON TRADE REVIEW, Cleveland, for $4 postpaid and in Europe by Penton Publishing Co. Ltd., Caxton House, London, for £1, net.

Theories in finance and economics always are interesting and usually contain much of practical value, however much they may be the result of scholastic study rather than practical experience. As in *Money*, a previous volume from the same authors, both volumes being issued for the Pollock Foundation for Economic Research, the authors evidently expect considerable opposition to their conclusions, on the part of those who believe in things as they are, rather than as they might be. The preface is reminiscent of Edward Bellamy's *Looking Backward*, of a generation ago.

Briefly the argument of the book is summed up in one of the concluding pages: "Progress toward greater total production is retarded because consumer buying does not keep pace with production. Consumer buying lags behind for two reasons: first, because industry does not disburse to consumers enough money to buy the goods produced; second, because consumers, under the necessity of saving, cannot spend as much money as they receive. There is not an even flow of money from producer to consumer and from consumer back to producer."

But relief is possible, the authors say, and they promise in due time to propose plans for solving the problem.

Honesty of purpose in seeking an actual solution is evidenced by the offer broadcast on the jacket of the volume, a substantial cash award being escrowed for the best adverse criticism of the volume. Decision is in the hands of three well qualified judges and ample time is given for study before criticism.

* * *

Plant Publications Surveyed

Employe Magazines in the United States, report of National Industrial Conference board, 247 Park avenue, New York; 86 pages, 6 x 9¼ inches; cloth; published by National Industrial Conference board.

This book covers thoroughly two important points in regard to employe publications; one is the purpose, cost and relative success of such publications, and the other is a list of 539 publications, giving size, page numbers, frequency and place of publication. There has been considerable need for such an analysis and compilation as this volume affords. Of the 490 publications analyzed, 252 are issued by manufacturing companies; 85 by commercial firms; 36 by railroads; 90 by public utilities; 22 by financial houses and five by mining companies. Most of the magazines are monthlies, numbering 402; 36 are published twice a month or fortnightly; 14 are published bimonthly, eight at irregular intervals, seven quarterly and one five times a year. Out of 428 such periodicals published within the past three years 228 or 53.2 per cent are devoted to employe interests and still are being published; 51, or 11.9 per cent have been used as sales organs from the start or were later converted into such; and 149 or 34.8 per cent have been discontinued. The cost varies from 8 cents per employe to $1.80, with the average $1 to $1.25 per employe per year. The report is of special value to any company contemplating the publication of an employe's magazine.

* * *

Vade Mecum of Finance

Financial Handbook, by Robert Montgomery; flexible leather binding, 1760 pages, gilt edges; published by the Ronald Press Co., New York, and supplied by IRON TRADE REVIEW for $7.50 postpaid and in Europe by Penton Publishing Co., Ltd., Caxton House, London, for £2, net.

A new departure in handbooks, this volume meets a need among business men and executives by presenting in a single volume trustworthy information on the practical problems involved in handling the finances of a business. The author was assisted by 32 contributors, expert in their several lines, and in the preparation of the matter many authorities were consulted.

The 34 sections cover a wide range, too large to be repeated. Financial statements and reports are treated, budgets, business law, fixed capital expenditures, security markets, export and import procedure, credits and collections, abbreviations of business terms, profit sharing plans, accounts and audits, federal taxes and many others of equal importance.

The volume is the same style as many other handbooks on various subjects, with special binding.

* * *

Trade Commission "Roasted"

Bothering Business, by H. A. Toulmin Jr., published by the B. C. Forbes Publishing Co., Inc., 120 Fifth avenue, New York. Paper, 4½ x 7 inches, 57 pages; supplied by Iron Trade Review for 50 cents postpaid.

This booklet contains a great deal of information that the average business man will want to read. It is an indictment of the federal trade commission for "heckling," badgering, or bothering business. It is said that 40 per cent of all the complaints issued by the commission have been dismissed by that body as unjustified; that of those complaints which the commission has upheld, issuing cease and desist orders, from 60 to 65 per cent have been reversed by the courts. About 75 to 80 per cent of the complaints issued by the commission are wholly unjustified, in the opinion of the author, who is identified with a patent law firm, with offices in Dayton, O.

In 1924, it is pointed out, the commission spent about $614,000 on its legal work, disposing of something over 100 cases at an estimate expense of $5000 to $6000 for each case. Details are given concerning a number of cases, tending to show the absurdities of the commission's system, and its misuse of power. One might assume after reading the statements that the conclusion would be an opinion in favor of abolishing the commission, but instead suggestions are offered in a constructive spirit with a view to improving the methods employed by the commission so that it might serve the legitimate purpose for which it was created.

Two chapters of the booklet are devoted to considerations of the patent office, how invention and manufacturing enterprise are discouraged by delays, with suggestions as to how the system may be improved.

Propose British Coal Settlement

Royal Commission Favors 10 Per Cent Reduction in Wages; Closing Uneconomic Mines; State Ownership of Mineral Lands—Iron and Steel Industry Consuming Less Than Two-Thirds of Normal Amount

LONDON, March 25.—(*European Staff Service*)—The most significant statement in the report of the Royal Commission on the British coal industry, recently issued, involves the reduction in the amount of coal for the manufacture of pig iron in 1925. If the British iron and steel industry were working up to normal, it would consume 37,000,000 tons of coal annually; but last year it took only 22,000,000 tons. Then the report concludes: "It is only to the revival of these heavy industries (including shipbuilding and engineering) that the British coal mining industry can look for any substantial increase in the demand for coal."

The Royal Commission, of which Sir Herbert Samuel is chairman, was named by the government Sept. 5, 1925. Because the government's subsidy to the coal industry will expire on May 1 by limitation, the report of the commission was hurried up. Since the report came out a number of important meetings have been held between Premier Baldwin and the miners and mine owners in the endeavor to work out a plan upon which the government and the industry can proceed. Baldwin says the government will accept the commission's suggestions if the two parties in the coal industry can agree. So far they have not been able to do so.

The union miners haggle over the proposal of the commission that miners' wages be reduced by about 10 per cent, this being a readjustment of the minimum percentage addition to the basic wage rates provided in the 1924 mine agreement. The reduction is to be fitted to the various districts, to some more and to others less. The commission declares that in the quarter ending with last December, 73 per cent of the coal output was raised at a loss apart from the subsidy, and the loss exceeded 1 shilling a ton on more than 60 per cent of the output.

Rejects Nationalization

Looking into the future of the British coal industry, the commission rejects the trade union proposal of "nationalization" of the coal industry. In place of that, however, it proposes that all such mineral rights shall be owned by the state. Ownership by the state should be acquired, says the commission, by purchase where it has a national value, and by declaration of state ownership in the case of unproved coal or coal at deep levels with no present market value.

The closing down of many uneconomic mines, amalgamation of others and the working out of operating and selling economies are recommended. It says the gap between sales prices and cost must be filled by the industry contracting to much smaller dimensions or by an immediate lowering of costs of production. Many mines now operating ought to be amalgamated, especially those of small size. But compulsory amalgamation is declared mischievous, although legislation should provide for such amalgamation in case of arbitrary objection.

Closer connection between the coal industry and allied industries ought to be worked out. Light, heat and power requirements of the nation should be studied and surveyed constantly by a new body to be known as the national fuel and power committee with advisory powers and nominated by the government from among official and other bodies. Additional facilities for research should be provided.

Further recommendations embrace formation of co-operative sales agencies, especially needed for the export trade. Municipal authorities ought to be empowered to engage in the retail trade. Larger railroad cars and like facilities ought to be used and ownership of such cars concentrated in fewer hands.

With the closing down of many colleries inevitably, the government must be prepared to conduct wholesale transfers of labor thus thrown out of work. Profit sharing schemes should be set up so that mine employes may take more direct interest in their work.

American coal export trade is not expected to bear adversely against British fuel exports since only 5 per cent of American mine production gets into export trade. This is due to the long railroad haul on American coal from mine to nearest seaboard. Germany, however, already has won a considerable portion of the former British coal trade with Italy, and may be expected to make further inroads elsewhere. But the continental coal sales advantage, now held because of the depreciated currencies of those coal producing countries, is expected to pass as they get upon a gold basis.

Concluding its report, the commission points the way to prosperity in the coal industry lies along three lines, the greater application of science to the winning and using of coal, larger units for production and distribution, and fuller partnership between employers and employes. It adds:

"In all three respects progress must come mainly from within the industry. The state can help materially * * * but the future depends primarily upon the leadership and the general level of opinion among the mine owners and the miners of Great Britain."

Implement Exports Gain

Washington, April 6.—Large foreign shipments of agricultural implements which began in January were continued in February when exports from the United States amounted to $8,731,883, an increase of approximately $300,000 over January and almost double the exports of February, 1925, according to the agricultural implement division of the department of commerce.

A new high mark was reached in the exports of wheel tractors in February when 7533 valued at $3,799,116 were shipped to foreign countries. The large shipments to Russia continued in February and 3570 tractors valued at $1,636,688 were exported to that country. Shipments of harvesters and binders in February totaled 5970 valued at $1,013,054. The plow shipments were also large and amounted to 21,667, valued at $690,425. Both of these items show a considerable increase over shipments of a year ago. Exports during the eight months ended February, 1926, amounted to $59,091,073. This is an increase of more than $13,000,000 over exports during the same period of 1925 and is equal approximately to the total exports of implements during the calendar year 1925.

Newport Boiler Co., New York, has increased its capital from 200 to 1800 shares no par value.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

MYSTIC IRON WORKS, Everett, Mass., is nearing completion of its blast furnace plant and officials expect operations to start within 60 days. The site is on Boston harbor directly across the Mystic river. Raw material will be brought by water, limestone from Rockland, Me., bituminous coal from mines in West Virginia, and ore from Sweden, Newfoundland and northern Africa. A 7000 ton concrete ore dock has been built, served by an ore bridge with a clear span of 250 feet and a length over all of 450 feet. The blast furnace itself is 87½ feet high and 23 feet in diameter, supplied by three stoves 100 feet high by 22 feet in diameter.

* * *

SHAW-WALKER, Muskegon, Mich., manufacturer of filing cabinets, advises its extension 80 x 220 feet, five stories, will be used for additional production of steel filing devices and warehouse purposes.

* * *

WHEELING MACHINE PRODUCTS CO., Wheeling, W. Va., has re-elected E. W. Krause president and treasurer, Alfred Briese vice president and production manager and A. C. Kennen secretary.

* * *

CONNORS STEEL CO., Birmingham, Ala., manufacturer of cotton ties, steel hoops and light bands, is building a plant to produce rail carbon reinforcing bars, light angles and flats. Fence posts also will be made. Production is planned for June.

* * *

NORTHERN ENGINEERING WORKS, Detroit, manufacturer of electric traveling cranes, hoists and foundry equipment, will make considerable enlargement of the latter department. Increased selling representation is being developed.

* * *

HUSKY WRENCH CO., Milwaukee, has moved recently into larger quarters and is adding to its line of products. J. G. Zummach is president and treasurer, Sig Mandl vice president and J. O. Wirtish secretary.

* * *

AMERICAN SMELTING WORKS, Detroit, recently incorporated, continues the business of the former company of that name, selling low-grade ores. F. E. Atchison is president, Zacharias J. Campaign secretary and treasurer and John Panasuk vice president.

* * *

PEORIA FOUNDRY CO., Peoria, Ill., has been bought by the H. M. Dietrick Co., for which it has been making castings as a large part of its business. Officers of the new holding company are H. M. Dietrick president, Joseph F. Hadank vice president, Lawrence Ryan secretary and Louis Hosbein treasurer.

* * *

LOEFFELHOLZ CO., 170 Clinton street, Milwaukee, will start at once replacing its entire plant by a new one, one unit at a time, to prevent interruption of production. The first unit, 50 x 140 feet, will be on a vacant portion of the site, the second unit to be of about the same size. George B. Miller is manager of the company.

* * *

MONARCH MACHINE & MFG. CO. Inc., Greensboro, N. C., which was incorporated recently and bought the plant of the W. J. Westbrook Elevator Co., will do a general line of jobbing machine work and manufacture cordwood saws and other machinery. W. C. Boren is president, A. R. Lewis vice president, W. C. Boren Jr., vice president and C. H. Lewis treasurer.

* * *

PEKIN FOUNDRY & MFG. CO., Pekin, Ill., recently incorporated, with $10,000 capital, has bought the plant and business of the Duisdieker Foundry & Mfg. Co. It will manufacture heavy and light gray iron, semi-steel and ferro-nickel castings and some specialties. A. V. Martens is president and general manager, E. P. Kastien vice president and D. P. Sommer secretary and treasurer.

* * *

STANDARD STOVE & RANGE CO., Rome Ga., recently incorporated, has organized by electing Reuben N. Towers president, M. S. Lanier vice president, W. F. Barron secretary and E. P. Grant treasurer. Directors are the officers and Ralph L. Wilson, George Smith, Charles R. Porter, George T. Watts and Harry Wright. Stoves and ranges will be manufactured.

* * *

GARL SIGNAL CO has been organized at Akron, O., to take over the goodwill, patents and business of the Garl Electric Co., 61 Bartges street. It will manufacture and sell the fire and police alarm signal systems developed by the former company. Manious Garl, who patented the systems, will be research and engineering chief of the new company.

* * *

THE Aircraft Corp. of America, 109 West Fifty-seventh street, New York City, has placed an order with the Sikorsky Mfg. Co., Westbury, L. I., for 10 twin-engined amphibian planes for commercial use in this country. These planes will have capacity for carrying four passengers, their hand baggage, and sufficient fuel for a four hour flight at an average speed of 100 miles an hour.

* * *

PATTERSON TOOL & SUPPLY CO., Dayton, O., is marking the forty-fourth year of its business existance as a company and the thirtieth as a corporation. It has no connection with any other concern and has been an independent dealer throughout its existence. W. B. Patterson is president, T. E. Fritch vice president and treasurer, W. R. Kemper secretary and F. B. Moorman assistant secretary.

* * *

HARDWARE SPECIALTY MFG. CO., Canton, O., recently incorporated, has bought the plant formerly operated by the F. J. Shively Co., 118 Seventh street, Canton. The new company will continue the manufacture of household specialties, including knives, weed pullers and others. M. M. Moore is president and treasurer, Lew S. Motz vice president and H. S. Ernst secretary and general manager.

* * *

AMERICAN MANGANESE BRONZE CO., Philadelphia, has reorganized and consolidated its organization under one management, T. H. Addie, vice president and treasurer, being elected president and general manager. He has been an officer of the company since 1914 as execu-

tive and metallurgical engineer. The company specializes in propeller wheels water turbine runners and bronze castings and forgings, and acid-resisting alloys and acid valves.

* * *

JOHN DEERE TRACTOR CO., Waterloo, Iowa, the name recently adopted by the former Waterloo Gasoline Engine Co., has re-elected William Butterworth president, L. W. Witry vice president and chief engineer, A. H. Head secretary and general manager and C. A. Lasser treasurer. The company was organized in 1892 and has manufactured tractors and stationary farm engines. It has been owned and operated since 1918 by Deere & Co., Moline, Ill., the change in name conforming to ownership and character of product.

* * *

NATIONAL CARBON CO., New York, has taken over the plant, goodwill and inventory of the Corliss Carbon Co., Bradford, Pa., and will continue manufacture of its grades of carbon as in the past. J. F. Kerlin, president of the Corliss company, and formerly assistant general sales manager of the National Carbon Co., will become vice president of the latter, in charge of sales of all carbon products. The purchase was made to round out the line of carbon products offered by the National Carbon Co.

* * *

THE Dravo Contracting Co. of Pittsburgh is low bidder for construction of 20 steel barges to be used by the St. Louis division of the United States engineers. The Dravo company bid was $49,600, or $2400 per barge. Other bidders and their amount were: American Bridge Co., Pittsburgh, $74,000; Rock Island Bridge & Iron Works, Rock Island, Ill., $74,000; Midwest Boat & Barge Co., Grafton, Ill., $59,800; Riter-Conley Co., Pittsburgh, $85,800; Midland Pa., $64,000; Greenville Boiler & Machine Works, Greenville, Miss., bidding on five barges $19,650; Charles Ward Engineering Co., Charleston, W. Va., $62,000; Nashville Bridge Co., Nashville, Tenn., $65,060; and the Howard Shipyards & Dock Co., Jeffersonville, Ind., $95,743.

* * *

WOOD HYDRAULIC HOIST & BODY CO., Indianapolis, Ind., has been reorganized as the Wood Hydraulic Hoist & Body Co. of Indiana and has elected James A. Perry president, Walter P. Rolland vice president, Norman A. Perry secretary and William C. Richardson treasurer. Mr. Rolland will be general manager. The company will carry on a truck equipment business, with hoisting equipment and trailers. The plant is at 317 North Capital avenue. A branch is maintained at 40 South Third street, Columbus, O.

* * *

HIRE FOUNDRY CO., 3000 North Adams street, Averyville, Ill., a suburb of Peoria, recently incorporated, has leased the foundry in No. 2 plant of the Avery Power Machinery Co., with its equipment. It will manufacture gray iron, chrome nickel and semisteel castings. It will make castings for the Avery Co., Caterpillar Tractor Co., Herschel Mfg. Co., Corn Products Refining Co. and the Essco Mfg. Co., as well as jobbing work. H. R. Hire is president and manager, N. Mass vice president and Paul Milereit secretary and treasurer.

* * *

FOWLER-WOLFE SHEET METAL WORKS, Paducah, Ky., will move to its new quarters at once, on the river front with a harbor for boats being repaired. The company is building a battery of three boilers for the United States Steamer OTTAWA of the Cincinnati district; two boilers for the towboat SANEORD E. HUSTON of the Choctaw Transportation Co., Des Arc, Ark., on the White river; and two boilers each for the ferryboats VICKSBURG and BATON ROUGE, to operate in the Baton Rouge trade. These boats now are being built in the Howard boatyards, Jeffersonville; also three boilers for the United States lighthouse tender WAKEROBIN now being built by the Dravo Contracting Co., at the Neville Island boatyards, Pittsburgh.

Decline of Rolled Iron Tonnage Shown

Rapid decline of rolled iron products in competition with steel is shown clearly in the accompanying table of production of leading rolled iron products from 1913 to 1925, from records of the American Iron and Steel Institute. In total the tonnage of rolled iron now is about one-third that produced in 1913, and some forms of iron have all but disappeared. During war years there was some accession to tonnage of a number of products, these serving to release steel to other uses or to increase the total production. At the end of the war demand the decline was resumed.

From these figures the end of rolled iron production except for a few special purpuoses may be seen, the process of extinction having covered a long period as steel gradually has superseded its sister-metal.

Various phases of production methods were discussed by H. M. Lane, Detroit, foundry engineer, at a meeting of the Newark Foundrymen's association at Newark, N. J., recently. Mr. Lane devoted particular attention to handling problems, grinding methods and the cleaning of castings. Announcement was made that an agreement had been reached continuing the wages of molders and coremakers in the Newark district at the rate of $7.50 per day.

Production of Finished Rolled Iron

	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Plates and sheets	64,729	56,590	20,253	13,303	29,071	14,657	40,628	34,111	20,237	40,845	6,107	33,113
Nail and spike plate	5,044	4,725	4,984	2,979	383	16	738	.....	103	154	103	67
Wire rods	832	731	2,236	867	2,287	2,989	1,956	4,721	525	665	780	615
Structural shapes	3,841	1,981	1,858	1,823	1,410	774	770	488	87	1,789	1,448	404
Merchant bars	1,026,632	563,171	657,107	993,948	983,926	846,898	446,549	663,032	198,324	317,665	404,730	258,737
Reinforcing bars	113	.....	.....	2,683	1,497	468	2,295	698	1,094	696	368	507
Skelp, flue, and pipe iron	312,746	264,340	262,198	355,198	336,591	258,500	192,146	252,403	115,523	218,868	216,846	165,581
Long angle splice and tie-plate bars	46,574	50,295	54,678	77,656	70,651	49,475	57,568	53,636	45,822	59,644	40,495	50,299
Hoops	.....	.....	300	630	.....	.....	.....	.....	.....	.....	.....	.....
Bands and cotton ties	.....	180	200	.....	1,807	497	389	3,345	618	2,678	2,813	907
Forging blooms, billets, etc	403	500	570	549	221	.....	412	258	250	186	3,181	104
Exports of semifinished	.....	1,461	1,231	.....	2,343	7,838	44	.....	.....	.....	.....	.....
All other	217,343	223,802	289,218	372,688	437,570	391,864	315,956	364,874	163,094	261,907	278,816	189,142
TOTAL GROSS TONS	1,678,257	1,167,776	1,294,833	1,822,571	1,867,757	1,573,976	1,059,451	1,377,566	545,677	905,097	955,597	699,476

News of Societies

THE NATIONAL METAL TRADES ASSOCIATION, which will hold its annual convention at the Hotel Astor, New York, April 15-16, has just announced the various programs for the three sessions. It is as follows:

Thursday, April 15

MORNING

President's report.
Treasurer's report.
Committee reports.
Discussion: "Training of Foremen."
Address: State Police and Crime," by Lyman C. Adams, superintendent of Pennsylvania state police, Harrisburg, Pa.

EVENING

Alumni banquet and presidents' and secretaries' banquet.

Friday, April 16

MORNING

Discussion: "Compensation Insurance Operations."
Address: "Management's Contribution to American Industry," by John W. O'Leary, president United States chamber of commerce.
Address: "The Real Tax Problem in the United States," by Ogden L. Mills, member of congress from New York.
Address: "Scientific Advances in China," by Dr. Clarence H. Robertson, Shanghai, China.

AFTERNOON

Address: "The Nub of the Agricultural Situation," by Virgil Jordon, chief economist, National Industrial Conference board, New York.
Address: "The Major Economic Problems of Agriculture and their Solution," by Dr. William J. Spillman, department of agriculture, Washington.
Address: "The Problems of International Finance," by W. Irving Bullard, vice president, Merchants National bank, Boston.
Election of officers.

EVENING

Annual banquet. Paul C. DeWolf will preside.
Address: "Law Enforcement," by Marcus Kavanaugh, judge of superior court, Chicago.

* * *

Picks Screw Thread Representative

Taking cognizance of the present activity in the process of international standardization of screw threads, the council of the American Society of Mechanical Engineers at its recent meeting in New Orleans, appointed Ralph E. Flanders, manager, Jones & Lamson Machine Co., Springfield, Vt., to represent that society on the Anglo-American conference committee on international screw threads. The society accepted the invitation of the American Welding society to join in research on fusion welding for pressure vessels. It was announced by the council that the Richmond, Va., meeting of the society would be conducted during the week of Sept. 27.

* * *

Perfecting Foundry Program

A novel feature of the second International Foundrymen's congress, and the thirtieth annual convention of the American Foundrymen's association, to be held at Detroit, Sept. 27-Oct. 1, will be a round table discussion of practical malleable foundry shop problems. This informal session will cover problems of core sands, dissemination of scrap information, standardization, methods of avoiding shrinkage, and machining of malleable castings. The regular session on malleable iron will consist of addresses by Enrique Touceda, consultant, American Malleable Castings association, Albany, N. Y.; H. A. Schwartz, research director, National Malleable & Steel Castings Co., Cleveland; and D. M. Scott, works manager, Symington Co., Rochester, N. Y.

Following the success of the meeting of foundry instructors at the 1925 convention, the second such meeting will be held at Detroit and will take the form of short papers on the foundry courses at Purdue university, Carnegie Institute of Technology and the universities of Illinois and Michigan. General discussion of foundry instruction and an inspection trip to the University of Michigan will follow the meeting.

* * *

Electrochemists Plan Meeting

Although the principal feature of the annual convention of the Electrochemical society at the Chicago Beach hotel, Chicapo, April 22-24, will be a symposium on chlorine, several subjects of importance to the iron and steel industry will be discussed. At a luncheon on Thursday noon, W. J. Priestley, Electrometallurgical Corp., will discuss "Comparative Merits of Electric and Fuel Fired Furnaces." On Friday morning, F. M. Becket, vice president of the Electrometallurgical Corp. and retiring president of the society, will make an address on "Modern Requirements in the Education of an Engineer."

Corrosion of iron will be discussed by Dr. T. Fujihara, a recent graduate of Harvard university. Attention will be given to yttrium, a rare metal recently prepared in relatively large

Convention Calendar

April 6-8—American Oil Burner association. Annual convention and exposition, Book-Cadillac hotel, Detroit. Office of secretary, 350 Madison avenue, New York.

April 15-16—National Metal Trades association. Twenty-eighth annual convention, Hotel Astor, New York. J. E. Nyhan, Peoples Gas building, Chicago, secretary.

April 21-23—American Welding society. Annual meeting at Engineering Societies building, New York. Miss M. M. Kelly, 29 West Thirty-ninth street, New York, secretary.

April 22-24—American Electrochemical society. Meeting, Chicago Beach hotel, Chicago. Colin G. Fink, Columbia university, New York, secretary.

April 28-30—National Foreign Trade council. Thirteenth annual convention, Francis Marion hotel, Charleston, S. C. O. K. Davis, India house, 1 Hanover square, New York, secretary.

May 3-6—American Society of Mechanical Engineers. New England regional meeting, Providence, R. I. Calvin W. Rice, 29 West Thirty-ninth street, New York, secretary.

May 10-15—Association of Chemical Equipment Manufacturers Inc. Second chemical equipment and process engineering exposition, Public hall, Cleveland. Roberts Everett, 1328 Broadway, New York, secretary.

May 12—American Refractories institute. Annual meeting at Bellevue-Stratford hotel, Philadelphia. D. A. Texter, 2202 Oliver building, Pittsburgh, secretary.

May 13-15—American Gear Manufacturers' association. Annual meeting at Book-Cadillac hotel, Detroit. T. W. Owen, 2443 Prospect avenue, Cleveland, secretary.

May 17-21—National Association of Sheet and Tin Plate Manufacturers. Fourth annual meeting at Hotel Greenbrier, White Sulphur Springs, W. Va. Walter W. Lower, 421 Oliver building, Pittsburgh, secretary.

May 17-22—American Supply and Machinery Manufacturers' association. Annual convention at Hotel Statler, St. Louis. F. D. Mitchell, 1819 Broadway, New York, secretary.

May 18-20—Southern Supply and Machinery Dealers' association. Annual convention at St. Louis. Alvin M. Smith, Richmond, Va., secretary-treasurer.

May 20-21—American Society for Steel Treating. Spring sectional meeting, Hotel Bond, Hartford, Conn. W. H. Eisenman, 4600 Prospect avenue, Cleveland, secretary.

June 1-4—Society of Automotive Engineers. Summer meeting at French Lick Springs, Ind. Coker F. Clarkson, 29 West Thirty-ninth street, New York, secretary.

June 7-10—Association of Iron and Steel Electrical Engineers. Twenty-second annual convention and exposition at Hotel Sherman, Chicago. John F. Kelly, 513 Empire building, Pittsburgh, secretary.

June 9-12—National Association of Purchasing Agents. Eleventh annual convention and exposition, Ambassador hotel and auditorium, Los Angeles. W. L. Chandler, Woolworth building, New York, secretary.

June 16-18—Society of Industrial Engineers. Thirteenth national convention, Bellevue-Stratford hotel, Philadelphia. George C. Dent, 608 South Dearborn street, Chicago, executive secretary.

June 21-25—American Institute of Electrical Engineers. Annual convention at White Sulphur Springs, W. Va. F. L. Hutchison, 29 West Thirty-ninth street, New York, secretary.

June 21-25—American Society for Testing Materials. Annual convention at Chalfonte Haddon hall, Atlantic City, N. J. C. L. Warwick, 1315 Spruce street, Philadelphia, secretary.

June 28-July 1—American Society of Mechanical Engineers. Spring-summer convention at Palace hotel, San Francisco. Calvin W. Rice, 29 West Thirty-ninth street, New York, secretary.

quantities by Prof. H. C. Kremers, A. P. Thompson and W. B. Bolton. This metal is highly crystalline and when introduced into iron, an acid-resisting alloy results. The Saturday morning session will be devoted to the electrolytic refining and plating of metals. Inspection trips have been arranged to the Hawthorne works of the Western Electric Co., the Crawford power plant of the Commonwealth Edison Co. and the Koppers by-product coke plant.

* * *

Organize Electrical Division

George S. Humphrey of the West Penn Power Co., was elected chairman of the newly formed electrical division of the Engineers' Society of Western Pennsylvania at the organization meeting held at Pittsburgh, March 31. W. C. Goodwin, Westinghouse Electric & Mfg. Co., was named vice chairman. The executive committee named is composed of M. E. Skinner, Duquesne Light Co.; D. M. Simons, Standard Underground Cable Co.; Andrew Pinkerton, American Sheet & Tin Plate Co.; J. M. Malady, Hillman Coal & Coke Co., and R. L. Rapp, General Electric Co. R. F. Schuchardt, Commonwealth-Edison Co., Chicago, spoke on "Superpower, the Giant Killer."

Urge Standardization of Steel for Building

Standardization and uniform practices in the structural steel industry was urged by Lee H. Miller, chief engineer of the American Institute of Steel Construction, in addressing a meeting of steel fabricators, engineers, architects, contractors and bankers at Atlanta, Ga., recently. Adoption of the institute's specifications calling for a stress of 18,000 pounds per square inch would result in cutting the country's annual building bill by about $50,000,000, according to Mr. Miller. A similar plea was made by Charles F. Abbott, executive director of the institute, who stressed the need for a uniform system of cost accounting, a bureau of technical research and better selling methods in the industry. Structural steel, he said, should not be sold on the basis of price per pound but on a basis of the service it would give. The program of Mr. Abbott and Mr. Miller schedules similar meetings in New Orleans, Houston, Tex., Los Angeles and 11 other cities.

To Study Zinc Coatings

A sectional committee of the American Engineering Standards committee has been organized to deal with the zinc coating of iron and steel with a view to drawing up uniform specifications for zinc coated products. The work will be carried on by a committee of seven technical experts. H. S. Rawdon, chief of the section on optical metallurgy of the bureau of standards, Washington, has been appointed a member of the committee and he will have charge of formulating methods for testing the products. The committee will devise acceptance tests which can be embodied in the standard specification tests for zinc coated products.

J. A. Campbell Believes Outlook Favorable

Business is not booming, but it is on a steady and conservative basis and the outlook is favorable, declared President James A. Campbell of the Youngstown Sheet & Tube Co., upon his return to Youngstown, from a trip to Florida.

"Buying is on a conservative basis," he stated, "which means that many customers are purchasing a month ahead, instead of three months. We had a good first quarter, and have, I believe, a fair to good second quarter ahead of us. Our financial position is strong. We have monev in the banks and no bank obligations."

March sales equaled those of February, which were reported at the time 20 per cent ahead of January. The company's backlog at the end of March was fully as good as at the end of February.

In March the company's new blast furnace at Indiana Harbor, Ind., established a production record of 790 tons per day, while records were set by the Hubbard blast furnace, plate mill and Western Reserve sheet mills at Warren.

United Alloy Earnings on Higher Basis

A net profit for 1925 of $2,415,146 in excess of that for 1924 is reported by the United Alloy Steel Corp., Canton, O., in its detailed report. The earnings last year after interest, depreciation, federal taxes, etc., were $3,128,985, while in the preceding year they were $713,839.

Gross earnings in 1925, the report shows, were $6,356,761, as against $3,084,316 in 1924. Interest, depreciation and depletion were $3,227,776, as compared with $2,370,447 in 1924. After provision for preferred dividends of $231,000 and for common dividends of $400,000, the 1925 surplus stood at $2,497,985. In 1924 the surplus was $82,839.

Total assets in 1925 were $42,616,121, while in the previous year they reached $47,800,694. Included among these for last year were cash, $2,556,337; accounts and notes receivable, $3,920,691; inventories, $11,786,236, and government securities, $277,963. In 1924 the figures were, respectively, $1,380,472, $2,629,475, $10,633,651 and $277,963. Liabilities for 1925 totaled $12,617,941, as against $20,300,499 in 1924.

Sloss-Sheffield Report Shows Good Gain

A substantial increase in the net profit of the Sloss-Sheffield Steel & Iron Co. is shown in its detailed report for 1925. After depreciation, depletion and taxes the net profit was $1,978,941, as compared with $1,516,276 for 1924.

Production and shipment of pig iron during 1925, according to Hugh Morrow, President of Sloss-Sheffield, exceeded all previous records, production increasing 26 per cent and shipments 56 per cent over 1924.

Mileage Scales Extended in Central Territory

Washington, April 6.—An order has been issued by the commerce commission, following application by B. T. Jones, agent for the Central Freight association lines, providing that the carriers establish rates on iron and steel not only westbound but in other directions in the territory between Buffalo, Pittsburgh and Cumberland, Md., on the east, and the Mississippi river on the west, and in accordance with the distance mileage scales set forth in the Jones & Laughlin rate decision. The Jones & Laughlin decision calls for lower rates on iron and steel from the Pittsburgh district to points in Indiana and Illinois and to St. Louis on the basis of a mileage scale. The fourth section order issued by the commission on April 1 is for relief from the long and short haul provision of the fourth section of the interstate commerce act.

The commission, in a fourth section order dated April 15, 1925, granted authority to the roads to make rates over the circuitous routes westbound that would be in line with the rates over the direct routes.

In behalf of the Illinois Freight association lines, C. W. Galligan has filed a similar application. When this fourth section order is granted, the way will be paved for the publishing of rates by May 29 under the Jones & Laughlin scale. This date has been made the effective date by the commission for the mileage scale tariffs to be published.

Current Statistics of Industry

1925 Steel Rail Output Shows an Increase

Steel rails produced in the United States in 1925 amounted to 2,785,257 gross tons, according to statistics compiled by the American Iron and Steel institute. Compared with the total of 2,433,332 tons made in 1924, this output was an increase of 351,925 tons, or 14.46 per cent. The accompanying box shows rails manufacture by processes from 1910 to 1925.

Open-hearth rails made up 96.64 per cent of the total; bessemer, 0.35 per cent; and all other, 3.01 per cent. Corresponding figures for 1924 were: Open-hearth, 94.83 per cent; bessemer, 0.66 per cent; and all other, 4.51 per cent. As was the case during the two preceding years, the proportion of the tonnage made by the open-hearth method increased and that made by the bessemer and all other methods dropped. Against the previous year, the 1925 open-hearth rails increased 16.65 per cent, bessemer decreased 39.72 per cent and all other dropped 23.67 per cent. The total rail production includes in addition to new rails rolled, rails rerolled from defective rails and from old rails. In 1925, the total rerolled was 97,034 tons as against 121,508 tons in 1924.

Mills engaged in rolling or rerolling rails totaled 21. Of this number, 16 employed the open-hearth method and two the bessemer. Five mills produced renewed or rerolled old rails. According to weight per yard, 163,607 tons of the total rail production was under 50 pounds, 219,648 tons was between 50 and 85 pounds, 765,371 tons was between 85 and 100 pounds and 1,636,631 tons was 100 pounds and over. Alloy treated rails in 1925 totaled only 4009 tons, against 5167 tons in 1924. Of this total, 1616 tons was titanium treated, 2323 tons was manganese treated, and 70 tons copper treated. Pennsylvania produced 705,833 tons of rails in 1925, an output which represented 25.3 per cent of the country's total. In 1924, the proportion was 28.8 per cent. Pennsylvania had six of the country's active works, while Alabama was second with three.

Furniture Orders Drop

Washington, April 6.—Orders in the business group received by 32 manufacturers of steel furniture in February were valued at $2,272,555, compared with $2,652,208 in January and $1,986,151 in February 1925, according to their reports to the department of commerce. Unfilled orders increased but shipments dropped. Reports show shelving orders of $656,029 compared with $580,948 in January. Following are further comparisons:

BUSINESS GROUP

	Orders received	Shipments	Unfilled Orders
1925			
January	$2,206,952	$1,972,137	$1,455,890
February	1,986,151	1,939,097	1,501,460
March	2,012,322	2,027,863	1,482,859
April	1,964,959	2,009,199	1,466,428
May	1,855,552	1,918,869	1,383,424
June	1,792,656	1,805,599	1,390,540
July	1,823,435	1,810,754	1,445,897
August	1,664,649	1,688,965	1,358,386
September	1,969,769	1,816,484	1,535,231
October	2,170,076	2,130,498	1,406,117
November	1,975,117	1,885,505	1,496,242
December	2,454,277	2,418,577	1,531,505
1926			
January	2,652,208	2,434,205	1,760,573
February	2,272,555	2,183,948	1,833,862

SHELVING

1925			
March	$ 606,754	$ 539,972	$ 515,484
April	566,834	650,769	436,048
May	523,426	549,272	372,296
June	501,182	514,117	360,089
July	510,815	482,187	398,973
August	516,694	452,716	447,255
September	624,676	542,173	511,689
October	730,911	622,471	626,933
November	686,814	574,905	739,831
December	620,947	788,461	570,941
1926			
January	580,948	577,364	583,415
February	656,029	603,144	632,545

Babbitt Sales Decrease

Washington, April 6.—Total apparent consumption of babbitt metal in February was 5,139,952 pounds, as reported to the department of commerce by 27 companies. This compares with 5,152,694 pounds in January and 5,164,619 pounds in February 1925. Manufacturers' sales totaled 3,867,710 pounds compared with 3,708,383 pounds in January. Consumption by producers totaled 1,272,242 pounds. Further comparisons follow:

	Total apparent consumption	Sales by manufacturers	Consumption by producers
1925			
January	5,683,183	4,620,815	1,062,368
February	5,164,619	4,103,340	1,061,279
March	5,644,288	4,395,901	1,248,387
April	5,126,416	3,928,136	1,198,280
May	5,081,668	4,189,558	892,110
June	5,074,966	4,085,125	898,841
July	5,184,196	3,694,386	1,489,810
August	5,441,823	4,068,706	1,373,117
September	4,621,033	3,579,780	1,041,253
October	5,550,247	4,169,870	1,380,377
November	4,954,683	3,534,026	1,420,657
December	4,878,806	3,910,160	968,646
Totals	62,405,928	48,279,803	1,444,311
1926			
January	*5,152,694	*3,708,383	1,444,311
February	5,139,952	3,867,710	1,272,242

*Revised.

Electric Orders Gain

Orders received by the General Electric Co. in 1925 totaled $302,513,380 compared with $283,107,697 in the year 1924; an increase of 7 per cent. Unfilled orders at the close of the year were $77,860,000 compared with $68,958,000 at the close of 1924. Net profits for the company available for dividends in 1925 were $38,641,217 compared with $39,235,548 in 1924. Net sales billed by the company last year were smaller than they were in the preceding year, the total being $290,290,165 in 1925 and $299,251,869 in the preceding year.

Falls caused the deaths of 14,000 persons during 1925, estimates the National Safety council.

Production of Rails by Processes

GROSS TONS

Years	Open-hearth	Bessemer	Rerolled*	Electric	Iron	Total
1910	1,751,359	1,884,442	.....	**	230	3,636,031
1911	1,676,923	1,053,420	91,751	462	234	2,822,790
1912	2,105,144	1,099,926	119,390	3,455	.....	3,327,915
1913	2,527,710	817,591	155,043	2,436	.....	3,502,780
1914	1,525,851	323,897	95,169	178	.....	1,945,095
1915	1,775,168	326,952	102,083	.....	.....	2,204,203
1916	2,269,600	440,092	144,826	.....	.....	2,854,518
1917	2,292,197	533,325	118,639	.....	.....	2,944,161
1918	1,945,443	494,193	101,256	.....	.....	2,540,892
1919	1,893,250	214,121	96,422	50	.....	2,203,843
1920	2,334,222	142,899	126,698	297	.....	2,604,116
1921	2,027,215	55,559	96,039	5	.....	2,178,818
1922	2,033,000	22,317	116,459	.....	.....	2,171,776
1923	2,738,779	25,877	139,742	118	.....	2,904,516
1924	2,307,533	16,069	109,730	.....	.....	2,433,332
1925	2,691,823	9,687	83,747	.....	.....	2,785,257

*Rerolled from old steel rails. Included with bessemer and open-hearth steel rails in 1910.

**Small tonnage rolled in 1910, but included with bessemer and open-hearth rails for that year.

Industrial Men in the Day's News

George E. Wisener, Retiring After 40 Years of Steelmaking

ROUNDING out his fortieth year of service in the iron and steel industry July 1, he will retire retaining his full health and energy.

ONLY two companies have claimed his allegiance, 39 years having been spent in steady advancement with the Carnegie Steel Co.

MUNICIPAL welfare and civic activities will share with private business interests his time after his retirement.

AT THE three-score milestone, a man these days is by no means old nor has he concluded his period of usefulness. George E. Wisener, although retiring from direct activity in the steel business July 1 next, after a connection of 40 years, as noted in the March 11 issue of the IRON TRADE REVIEW, states that he is neither the one nor has he reached the other. A glance at the virile clear-eyed "young" man in the photograph would appear to justify that statement. From as far back as he can remember, however, as he recently expressed himself to W. G. Clyde, president of the Carnegie Steel Co., which interest he has served for the past 39 years, Mr. Wisener always has wanted "to retire from active part in my life work while I still retain my full health and energy. I feel that the end of this 40-year period is a fitting time to take such action."

Mr. Wisener was born in Pittsburgh, Dec. 10, 1866. He received his education in the public schools of Beaver Falls, Pa., and at Geneva college, that city.

He has been identified with only two companies during his business career. It was in 1886 that he entered the employ of the Hartman Steel Works, Beaver Falls, but after about a year was appointed assistant recorder at the Homestead, Pa., works of the Carnegie Steel Co. He remained at that plant for 20 years, his sterling worth receiving notice and appreciation by advancement. In two years, or in 1889, he became head of the structural shipping department. In 1892, three years later, he decided to take up the blowing of steel and after eight years' experience as a blower in the bessemer department he was made its foreman. That was in 1900, and two years later he again received promotion, being appointed superintendent of the bessemer and blooming mills, the duties of which position he discharged with honor for five years. His ability as a bessemer steel man led to his selection in 1907 as general superintendent of the Mingo and Bellaire, O., works of the Carnegie company, which duties he will turn over to his successor on July 1.

In his letter of resignation to President Clyde, Mr. Wisener said that the Mingo and Bellaire plants, while old, are still in good condition and can be ranked with the best. He wrote further: "I am particularly proud to turn over to you the organization, both as to department heads and personnel, and I am sure you will find that they will measure up to any standard you may establish. Again I wish to express my regret in leaving the service of yourself and the company, and feel that such action is the only proper consideration for my family and for myself."

He will continue his residence at Steubenville, O., where he always has been active in civic affairs and where much of his time was spent in promoting municipal welfare. Through his energy and aid the Steubenville water plant was restored to a high degree of efficiency. He always has been an advocate and a worker for better roads. Mr. Wisener is identified with other business interests to which he will devote considerable time after his retirement. He has been a president of the chamber of commerce at Steubenville and is on the board of directors. he recently was elected president of the Steubenville Country club and is a member of the Rotary club as well as other social and professional organizations. Mr. Wisener is a member of the American Iron and Steel institute.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

E H. SNIFFIN, former manager of the power department of the Westinghouse Electric & Mfg. Co., East Pittsburgh, effective April 2 became assistant to the vice president. In addition to the promotion of Mr. Sniffin, complete reorganization of the sales department involving the reallocation of the managing personnel and the creation of several new activities, was made known by E. D. Kilburn, vice president and general sales manager.

Also effective immediately the following changes are announced: Director of sales, T. J. Pace, formerly manager supply department; central station manager, G. H. Froebel, formerly manager marine department; industrial sales manager, J. M. Curtin, formerly manager industrial department; transportation sales manager, M. B. Lambert, formerly manager railway department; assistant director of sales, A. C. Streamer, formerly assistant to manager supply department; generating apparatus manager, H. W. Smith, formerly general engineer; traction apparatus manager, A. J. Manson, formerly manager heavy traction division, railway department; motor apparatus manager, O. F. Stroman, formerly assistant to manager industrial department; switchgear apparatus manager, R. A. Neal, formerly head of switch section, supply department; and distribution apparatus manager, G. A. Sawin, formerly assistant to manager supply department.

The announcement is the culmination of a reorganization of the Westinghouse sales system which has been in course of development for some time.

* * *

Charles Kandel has been appointed sales manager of the International Oxygen Co., Newark, N. J.

* * *

Charles G. Huber has been elected new president of the Union Bridge Co., Portland, Oreg., succeeding the late George A. Sears.

* * *

J. P. Corcoran, after 10 years with the American Ship Building Co., Cleveland, in various capacities, has resigned and taken a position with the Chicago Transfer & Clearing Co., Chicago. Mr. Corcoran will be engaged in the sale of manufacturing sites and industrial properties in the Clearing Industrial district of Chicago.

* * *

Samuel M. Vauclain, president, Baldwin Locomotive Works, Philadelphia, left recently for Russia to confer with

L. W. CROSS

New sales representative at Detroit for Empire Steel Co., Cleveland, as announced in IRON TRADE REVIEW, April 1

authorities of the Soviet government in the interests of his company.

* * *

Burtner Fleeger has resigned as treasurer and sales manager for the Sivyer Steel Casting Co., Milwaukee, to become active vice president of the Oklahoma Steel Castings Co., Tulsa, Okla.

* * *

Arthur M. Long has become identified with the Youngstown Sheet & Tube Co. and will have charge of tin plate sales when the company's new Indiana Harbor plant is completed. Mr. Long for several years was associated with the Jones & Laughlin Steel Corp. in its Chicago office, resigning in November 1917 to join the sales organization of the Trumbull Steel Co. Until April 1 he was manager of sales, sheet and tin plate division for the Trumbull Steel Co., Warren, O.

* * *

Carmi A. Thompson, head of Tod-Stambaugh Co., Cleveland, iron ore interests, and Becker Steamship Co., that city, has been named by President Coolidge as his personal representative in investigating conditions in the Philippine Islands.

* * *

W. C. Davis, formerly general manager, has been elected president and treasurer of the Foote Bros. Gear & Machine Co., Chicago.

E. H. Vogt was made secretary and assistant treasurer at the recent board meeting of the Foote company.

* * *

Harry Heffrin, formerly of the Kittaning Iron & Steel Co., Kittaning, Pa., has just been appointed blast furnace superintendent in charge of operations of the top furnace department of the Wheeling Steel Corp., Wheeling, W. Va. He succeeds W. J. Huge, resigned.

* * *

Walter Mickelson, formerly of the Oil Gear Co. and Kearney & Trecker Corp., both of Milwaukee, has become Wisconsin representative for the Stocker-Rumely-Wachs Co., dealer in machinery, Chicago. His headquarters will be at 396 Twenty-seventh avenue, Milwaukee.

* * *

David S. Hays has been made superintendent of the open-hearth works of the Edgar Thomson plant, Carnegie Steel Co., Pittsburgh. Mr. Hays, who was assistant superintendent of the open-hearth department at the Homestead works of the Carnegie company, succeeds John W. Kagarise, resigned.

* * *

Ross H. McMaster has been elected president of the Steel Co. of Canada, Ltd. Mr. McMaster, former vice president of the company, succeeds Robert Hobson, who died a short time ago. Harry Champ, secretary-treasurer, was appointed vice president, and Homer M. Jacques, manager of eastern points of the company, was made a director. Mr. McMaster is a director of the Canadian Pacific railway.

Obituaries

CLARENCE C. ROBBINS, whose death March 23 as a result of an automobile accident the previous evening was announced in IRON TRADE REVIEW, March 25, had a varied industrial experience. Mr. Robbins was born in Cleveland, Dec. 16, 1877 and was educated in the elementary schools of that city, leaving at an early age to serve an apprenticeship in the pattern shops of the Cleveland

CLARENCE C. ROBBINS

Punch & Shear Works Co. After his term there he worked for Julian Kennedy, Pittsburgh, engineer, later joining the former Kelley-Jones Co. at Greensburg, Pa. In 1904 he returned to Cleveland to take charge of the Cleveland Machine Co. and while thus occupied assumed direction of the Cleveland Crane & Engineering Co. In addition to being general manager he was made secretary, which offices he held at his death. Mr. Robbins was treasurer of the Clarke Chemical Co. at Wickliffe, O., and vice president and director of the First National bank, Willoughby, O.

* * *

Willis G. Knight, partner of H. W. Knight & Son Metal Pattern Letter Works, Seneca Falls, N. Y., died there April 1 at the age of 57.

* * *

W. M. Bush of Rogers Brown & Crocker Bros. Inc. and brother of D. F. Bush, chairman of the board, died at New York, March 28.

* * *

Edgar C. Woolgar, sales manager of the National Acme Co., Cleveland, machine tool builder, died April 4 at his home there, aged 52. He was prominent in social and Masonic activities of Cleveland.

* * *

Capt. Benjamin Rockafellow, cousin of John D. Rockefeller and pioneer in Colorado mining, died March 29 at the age of 91. Captain Rockafellow developed mines which later became holdings of the Colorado Fuel & Iron Co.

* * *

G. N. Miller, consulting hydraulic engineer and president, Miller Engineering Co., Seattle, died there March 20. He was formerly city engineer of Helena, Mont., and Bellingham, Wash., and was engaged in municipal work in Seattle for a number of years before entering private practice.

* * *

Maj. J. A. B. Tompkins, for more than 30 years chief assistant United States engineer at Milwaukee, died suddenly at his desk on March 30. He was 69 years of age. He was a graduate of Rensselaer Polytechnic institute and was widely known as a harbor expert.

* * *

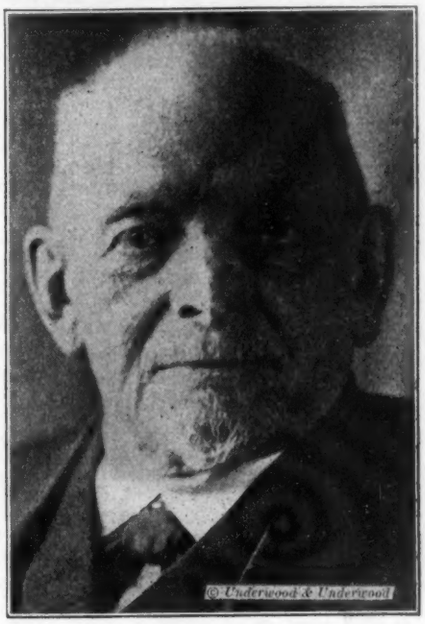
Patrick Maher, proprietor of a machine shop and foundry in Jamestown, N. Y., for more than 40 years, died there April 1 at the age of 90. He was born in Ireland, March 19, 1836 and came to the United States in 1847. He opened his first foundry in 1886 and was active in the industry until three years ago.

* * *

S. P. Egan, 65 years old, vice president of J. A. Fay & Egan Co., Cincinnati, manufacturer of woodworking machinery died at his home in that city March 30 following an illness of two months. Mr. Egan, a native of Hamilton, Can., was active in civic affairs at Cincinnati and was president of the industrial bureau, when that organization was absorbed by the chamber of commerce three years ago.

* * *

August Thyssen, one of the dominating figures of the Ruhr iron and steel industry, and a leading industrialist of Germany, died April 4 at his Lindsborg castle near Muehlheim. He died aged 86, of pneumonia following an operation on his eyes. Mr. Thyssen was born of poor parents in Eschweiler, Rhineland, in 1840. In his early twenties he founded a hardware store at Duisburg and in 1871 formed Thyssen & Co. at Muehlheim. The Thyssen interests, comparable with those of Krupp and Stinnes, con-



AUGUST THYSSEN

sist of ore and coal mining, blast furnaces, steelworks, machinery and shipbuilding plants, etc. The total capacity of the Thyssen group per year is 1,700,000 tons of pig iron; 1,300,000 tons of ingots and 5,300,000 tons of coal.

Fritz Thyssen, son of August Thyssen, will become head of the family estate.

* * *

Carlyle F. Barnes, president of the Wallace Barnes Co., Bristol, Conn., spring manufacturers, died recently in San Diego, Calif., aged 73 years. The company, was organized by his father.

Mr. Barnes retired from active management seven years ago, turning his business over to his two sons but retaining the office of president and director of the Associate Spring Corp. of New York, holding company for the Wallace Barnes interests.

Low Steel Prices Hurt European Markets

(*Concluded from Page* 961)

competition from Germany, Luxemburg, and Lorraine on export markets. In France there are signs that export business is declining, notwithstanding the present low value of the franc. The French experience greater competition from Belgium, whose production is increasing and from the Germans, who are sacrificing profits to recapture export markets. In the semifinished department, foreign buyers are demanding low prices, which makers will not meet. Foundry pig iron for export is about 345 Belgian francs ($13.90) f.o.b. Antwerp; basic bessemer blooms have been made at £4 12s 6d ($22.45) c.i.f. Hull, England; bars have been offered at £5 5s ($25.45) and beams as low as £4 16s ($23.25) f.o.b. Antwerp.

German export business is reviving, although prices are low and unremunerative. Tonnages of German pig iron have been shipped to the United States. Bars are quoted as low as £5 3s 6d ($25.05) f.o.b. Northern seaports for extended delivery; beams are £4 16s ($23.25); plates 3/16-inch are offered at £5 8s ($26.20), and £5 18s These prices are generally lower than ($28.55) is asked for ⅛-inch sheets. those accepted by Belgium, Luxemburg, and France.

Belgian Tonnage Down

Brussels, March 25. (*European Staff Service*)—Iron and steel production figures for Belgium in January reflect the effects of the serious floods in the Liege district. Pig iron output was 137,790 metric tons, against 161,480 tons in December 1925. Furnaces in blast Jan. 31 was 37. Output of steel ingots and castings totaled 116,180 tons, against 158,020 tons in December 1925, the January figure including 110,930 tons of steel ingots and 5250 tons of castings. January figures for pig iron and steel are the lowest for years. Production of finished steel in January was 106,260 tons, against 129,930 tons in December 1925.

It is expected production figures will show a considerable increase for February, not only because the floods had subsided by the end of January but also since plants in the Charleroi district have resumed operations. It will be recalled that this district has a capacity of production of about 500,000 tons a year. The following table gives production figures for January compared with the monthly averages of the last three years and 1913 in metric tons:

Mon. ave.	Coke	Pig iron	Steel ingots and castings	Finished steel
1913	293,585	207,055	205,550	154,820
1923	348,330	178,995	191,410	161,950
1924	346,650	234,000	238,380	198,115
1925	342,360	211,785	200,880	164,940
1926				
Jan.	321,220	137,790	116,180	106,260

Luxemburg Makes More

Luxemburg, March 25. (*European Staff Service*)—Output of Luxemburg iron and steel plants for January was 203,673 metric tons of pig iron and 173,875 metric tons of steel ingots and castings, the respective figures for December being 199,575 tons and 176,130 tons.

Pig iron production included 199,754 tons of basic bessemer pig iron, 2689 tons of foundry and 1240 tons of forge. The steel output included 171,244 tons of basic bessemer steel, 1748 tons of acid open-hearth and 883 tons of electric steel. The following table gives January figures in comparison with the monthly averages of 1913 and the three last years in metric tons:

Mon. ave.	Pig iron	Steel ingots and castings
1913	212,320	110,500
1923	177,220	100,100
1924	181,100	157,195
1925	195,335	173,690
1926		
Jan.	203,673	173,875

German Output Lower

Berlin, March 25. (*European Staff Service*)—Production of pig iron in Germany for January was 689,463 metric tons, against 717,011 tons in December 1925 and 909,849 tons in January 1925. This year's January output included 46,892 tons of hematite pig iron, 97,564 tons of foundry, 2430 tons of bessemer, 422,589 tons of basic, 118,764 tons of ferro-alloys, and 1224 tons of forge pig iron.

Output of steel and castings in January was 790,971 metric tons, against 763,596 tons in December 1925 and 1,180,915 tons in January 1925. This year's January output included 369,987 tons of basic bessemer steel, 393,837 tons of basic open-hearth, 6822 tons of acid open-hearth, 4260 tons of crucible and electric and 16,065 tons of steel castings. The output of finished steel in January was 669,788 metric tons, against 982,062 tons in January 1925.

Owing to the slump in German business these figures are low in comparison with those at the beginning of last year. It will be recalled that the raw steel union fixes for the time being the output of steel at 65 per cent of capacity. The following table gives January figures and the monthly averages of the last three years, in metric tons:

Mon. ave.	Pig iron	Steel ingots and castings	Finished steel
1923	411,360	525,435	
1924	651,020	819,605	681,195
1925	848,060	1,016,120	853,850
1926			
Jan.	689,463	790,971	669,788

French Production Up

Paris, March 25. (*European Staff Service*)—Pig iron production in France reached its highest mark since the war in January with 762,810 metric tons, against 748,375 metric tons, the next highest point, reached in December 1925. The output included 562,502 tons of basic bessemer pig iron, 146,216 tons of foundry, 35,090 tons of forge, 874 tons of acid bessemer and 18,128 tons of special grades.

Production of steel ingots and castings totaled 660,566 metric tons, against 658,506 metric tons in December 1925 and 668,300 tons, the highest mark, reached in October 1925. The January output included 649,693 tons of ingots, the remainder being steel castings. Of this output 449,075 tons were basic bessemer steel, 199,518 tons were acid open-hearth, 4108 tons acid bessemer, 6547 tons electric and 1120 tons crucible steel. The following table gives production figures for January compared with the monthly averages of 1913 and the last three years, in metric tons:

Mon. ave.	Pig iron	Steel ingots and castings
1913	433,900	390,580
1923	452,650	425,795
1924	637,660	575,540
1925	705,985	617,920
1926		
Jan.	762,810	660,566

German Exports Hold

Berlin, March 23. (*European Staff Service*)—Germany's exports of iron and steel products during January were 391,172 metric tons compared with 374,706 tons in December last year and 304,492 tons in January 1925. Shipments in January were the highest in any month for five years. Among the principal items were 82,291 tons of bars and bands, 46,263 tons of rolled and drawn wire, 38,569 tons of rails and track fastenings, 38,317 tons of scrap, 34,288 tons of plates and sheets, and 28,172 tons of pig iron.

Imports in January were 67,597 metric tons, compared with 64,126 tons in December last year and 260,559 tons in January 1925. Among the principal items were 16,574 tons of bars and bands, 15,228 tons of rails and track fastenings, 11,182 tons of blooms, billets and sheet bars, and 8566 tons of pig iron.

French Exports Less

Paris, March 25. (*European Staff Service*)—A drop has been registered in French iron and steel export figures, the exports of pig iron for January being 64,888 metric tons against 94,198 metric tons which was the highest mark reached last year in December. Steel exports in January totaled 266,471 metric tons, against 328,582 tons, the highest mark, reached in December, for the whole of 1925. With the re-appearance of Germany on export markets and the resumption of work in the Charleroi district it is not to be expected that France will soon surpass the high figures reached in December 1925.

Imports of iron and steel into France during January were low, imports of pig iron amounting to 2657 metric tons, or slightly over 250 tons less than in December last year. Imports of steel totaled 6906 metric tons, the lowest figure since March 1925. The following table shows import and export figures for January and the monthly averages of the last three years in metric tons:

Mon. ave.	IMPORTS		EXPORTS	
	Pig iron	Steel	Pig iron	Steel
1923	5,305	55,495	49,320	153,990
1924	3,540	56,780	63,900	187,380
1925	2,693	11,703	58,855	272,270
1926				
Jan.	2,657	6,906	64,888	266,471

Construction and Enterprise

Concise and Timely Business Building Opportunities
from the Field of Industry

GADSDEN, ALA.—Sanquoit Spinning Co., Capron, N. Y., will build a power house in connection with its plant to be erected here. A machine shop also will be built.

LOS ANGELES—Board of education is having plans made for a machine shop 35 x 60 feet in Luther Burbank junior high school.

LOS ANGELES—White Motor Truck Co., Cleveland, has bought a site and is having sketches made for a branch factory 240 x 475 feet at Washington street and Maple avenue.

LOS ANGELES—Lily Foundry Co. has started operations in its new plant at East Twenty-sixth street and Indiana avenue, and has tentative plans in hand for an extension to increase capacity.

SANTA MONICA, CALIF.—Douglass Co., 2435 Wilshire boulevard, has nearly completed its new airplane assembly plant, the fourth extension in a year, which will increase production considerably.

BRIDGEPORT, CONN.—Bassick Co., 38 Austin street, is building a 1 and 2-story brass foundry 100 x 120 feet at Austin and Warren streets.

BRISTOL, CONN.—E. Ingraham Co., will build a 5-story addition 80x125 feet, two floors for manufacturing and remainder for warehouse. A 1-story addition to plating department will also be built.

GRAND HAVEN, CONN.—Challenge Machinery Co. recently damaged by fire, is rebuilding and repairing its plant.

HARTFORD, CONN.—The Sesamee Co. has been formed with $500,000 capital to manufacture keyless locks. The incorporators include Douglas H. Thomson of Thomson-Fenn & Co., Philip B. Gale, president of the Standard Screw Co., and A. G. Hatch of Hartford.

ATLANTA, GA.—Seeger Refrigerating Co. is building a plant with 8000 square feet floor.

LEWISTON, IDAHO—Clearwater Timber Co. will start work at once on construction of a machine shop at East Lewiston.

CHICAGO—Hill Products Co., 4601 Belmont avenue, nuts and bolts will build a 1-story plant 120x280 feet from plans by D. J. Schaffner, 64 West Randolph street.

CHICAGO—G. Hoffman, 2921 East Seventy-ninth place, manufacturer of dies, will build a 1-story plant 25 x 50 feet at 3067 East Ninety-third street.

CHICAGO—Crowe Name Plate & Mfg. Co. will build plant 118x300 feet at Grace street and Ravenswood avenue to replace present structure.

CHICAGO—United States Radiator Co., 500 North Dearborn street, is taking bids on an addition 45x126 feet to its plant at 7 East Twenty-eighth street.

CHICAGO—Mathias Klein & Sons, 3200 Belmont avenue, J. M. Klein president, manufacturer of electric line equipment, are having plans made for a 1-story addition 100x300 feet.

CHICAGO—Drying Systems Inc., F. A. Lippert president and general manager, 11 South DesPlaines street, will build a 3-story addition 25 x 125 feet. Frank D. Chase Inc., 720 North Michigan avenue, engineer. General contract to R. & G. Construction Co., 6425 South Park avenue.

Where additional information is presented, reference is made to date of issue in which previous item appeared.

CHICAGO—Universal Test Equipment Co., 2930 North Oakley avenue, has been incorporated with $12,000 capital to manufacture electrical devices, batteries, tools and supplies by Henry Frankfurter, 30 North LaSalle street, and others.

CHICAGO—Rotar Engineering Works, 2835 North Western avenue, has been incorporated with $10,000 capital to manufacture machinery and appliances by Lawrence Lenity, Sol D. Tannenbaum and Walter E. Amberg. Alvin E. Stein, 70 West Monroe street is correspondent.

CHICAGO—Steinbrecher Arch Shank Co., 925 Wrightwood avenue, has been incorporated with $30,000 capital to manufacture arch supports, arch shanks and similar products by Walter H. Eckart, Ira W. Hurley and William U. Bardwell. Loucks, Eckert & Peterson, 10 South LaSalle street, are corrspondents.

CHICAGO—Atlas Weather Strip Co., 3943 West Fifteenth street, has been incorporated with $36,000 capital to manufacture weather strip of metal and other materials by Erwin S. Consky, Edwin G. Baumann and Joseph Danda. Joseph E. Paulissen, 160 North LaSalle street, is correspondent.

CHICAGO—Republic Waste Material & Metal Co., 2633 West Roosevelt road, has been incorporated with $15,000 capital to prepare and deal in waste metal materials by Morris Smith, Louis Smith and Louis Plotkin. S. Masser, 5552 Warwick avenue, is correspondent.

ANDERSON, IND.—Anderson Stove Works, North Anderson, J. C. Quinn general manager, will take bids soon on an addition to its plant from plans by E. F. Miller, architect, Farmers Trust building.

ELWOOD, IND.—G. I. Sellers & Sons Co., kitchen cabinets, is having plans made for a power house 45x70 feet and a 2-story addition 75x170 feet.

INDIANAPOLIS—Thomas L. Green & Co., 202 Miley avenue, manufacturers of baking machinery, is building a 2-story plant 82 x 90 feet.

MARION, IND.—Superior Body Works, 717 West Nelson avenue, automobile body manufacturer, Allen Messick manager, is having preliminary plans made for an addition to be built later in the year.

MUNCIE, IND.—Aladdin Mfg. Co., manufacturer of electric lamps, will build a 1-story addition 80x92 feet.

ASHLAND, KY.—American Rolling Mill Co. is making plans for large additions to its plant here, including a building 90 x 425 feet.

COVINGTON, KY.—American Metal-Craft Works & Sales Co. has been incorporated with $10,000 capital by W. T. Hutcheson and R. W. Bledsoe.

BALTIMORE—McNamara Bros. Co., Kloman street, is building a 1-story addition, 72 x 100 feet to its tank, plate and boiler plant.

ATTLEBORO, MASS.—General Plate Co. will build a 2-story plant 50 x 215 feet at Forest and Horton streets.

BOSTON—Norfolk Iron Co., 33 Newport avenue, Quincy, Mass., is building a 1-story plant 70 x 150 feet.

BOSTON—D. R. Campbell Machine Co., 52 Purchase street, is building a 1-story machine shop 40 x 110 feet on Mildred avenue.

BOSTON—The Automatic Time Reminder Co. has been incorporated with 1000 shares no par value by Oliver A. Wyman and Alphonso A. Wyman, both of Newton, Mass., and Helen E. Moisan, Boston.

BOSTON—The Boston Cutting Die Co. has been incorporated with $40,000 capital by John O. Larson and Carl G. Larson, both of Wallaston, Mass., Carl M. Larson, Boston, and Emil W. Hanson, Brockton, Mass.

BOSTON—Dwight P. Robinson Inc. is general contractor in charge of the erection of a power house addition in South Boston for the Boston Elevated Railways. Contract for about 300 tons of steel for this work has been let to the New England Structural Co.

EAST CAMBRIDGE, MASS.—Wellington & Buck, Bridge street, will require considerable conveying equipment for a new coal-handling plant.

EVERETT, MASS.—Bazley Engineering Co. Inc., mechanical, industrial or engineering appliances, has been formed with $100,000 capital by William H. Bazley and Henry W. Bazley, both of Everett, and Warren J. Bazley of Wakefield, Mass.

MILFORD, MASS.—Novelty Mfg. Co. has been incorporated with $15,000 capital to operate a general foundry and machine shop business, manufacturing machinery, pumps, winches, capstans, tools, by Joseph Albiuso president, Rudolph Mainini treasurer and Enrico Iacovelli clerk.

FOXBORO, MASS.—Foxboro Co., Neponset avenue, precision equipment, E. H. Bristol president, will build an addition to its plant.

MEDFORD, MASS.—J. J. Mahoney, 10 Fountain street, is building a 1-story repair shop 88 x 114 feet.

WAKEFIELD, MASS.—Lead Lined Iron Pipe Co. has been incorporated with $300,000 capital to manufacture amalgamated acid resisting leadlined pipe, fittings, valves and soil pipe by Thomas E. Dwyer president, Dennis F. Dwyer treasurer and Gertrude A. Dwyer clerk.

WESTFIELD, MASS.—Foster Machine Co., South Broad street, will build a 3-story addition 80x230 feet from plans by M. B. Harding, architect, 6 Main street.

DETROIT—Play Boy Inc. has been incorporated with $5000 capital to manufacture metal specialties by Harry Taylor, 4242 Fairview avenue, Hiram Ash and L. J. Hurdman.

DETROIT—Ingram Iron Works, George M.

(*Continued on Page* 980)

Quotations Steady

As Jobbers Await Increased Buying —Heavy April Demand Expected

IRON and steel jobbers expect increased business in April. Weather conditions are more favorable and the usual spring activity is counted on to build up good shipments. Prices are steady, awaiting developments in demand.

Quotations on iron and steel out of warehouse in the New York metropolitan district continue steady. Demand is at a slightly better rate than that in March, but still does not equal that expected for this season. A feature in recent trading is the appearance of larger inquiries for structural steel, demand being the best in sometime.

From present prospects, April will prove a fruitful month for Pittsburgh warehouses. March was a fair month but demand is increasing, particularly for hot rolled and cold finished bars. Prices remain unchanged.

Buffalo warehouse business holds steady with demand coming from nearly all classes of consumers. March business was greater than Febhuary. Prices are unchanged.

Jobbers at Cincinnati report a slight improvement in the volume of orders for the past week. While March was unsatisfactory in orders booked, prices held firm.

Extremely rough weather during the latter part of March had a decidedly unfavorable effect on the movement of iron and steel goods out of St. Louis warehouses.

Firmer prices are being quoted by jobbers on some products, especially bars, at Philadelphia. March was a good month and April is starting at an equal or better rate.

Present business continues good at Detroit warehouses. Operators report March business ahead of February, tonnage per day maintaining about an equal average.

Jobbers look for continued good business. Prices are unchanged. Rumors are current of a price change on galvanized sheets and it is reported that a smaller operator has sold small quantities at slightly reduced prices.

Cleveland jobbers report a steady volume of buying. Usual spring increases have not occurred yet but the market continues to expand. Prices are unchanged and firm.

The National Safety council estimates that the direct economic cost of accidents is approximately $5,000,000,000 per year.

Quotations at Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.15c
Ft. Worth	3.90c
Los Angeles	3.20c
New York	3.24c
Philadelphia	3.00c to 3.20c
Pittsburgh	2.90c
Portland	3.00c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.15c
St. Paul	3.25c

IRON BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
Ft. Worth	3.90c
New York	3.24c
Philadelphia	3.00c to 3.20c
St. Louis	3.25c

REINFORCING BARS

Boston	3.265c to 3.50c
Buffalo	3.30c
Chicago, billet	2.60c
Chicago, rail steel	2.00c
Cincinnati	3.30c
Cleveland	2.40c to 3.10c
Detroit	3.15c
Ft. Worth	3.75c
Los Angeles, C. L.	3.05c
Los Angeles, L. C. L.	3.30c
New York	2.95c to 3.15c
Philadelphia	3.00c to 3.25c
Pittsburgh	2.50c to 2.60c
San Francisco, C. L.	3.35c
San Francisco, L. C. L.	3.80c
Seattle	3.50c
Youngstown	2.50c to 2.60c

STANDARD STRUCTURAL SHAPES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.25c
Ft. Worth	4.50c
Los Angeles	3.20c
New York	3.34c
Philadelphia	2.70c to 3.05c
Pittsburgh	3.00c
Portland	3.10c
San Francisco	3.30c
Seattle	3.35c
St. Louis	3.25c
St. Paul	3.35c

PLATES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.00c
Cleveland, 3/16-inch	3.225c
Detroit	3.25c
Detroit, 3/16-inch	3.45c
Ft. Worth	4.50c
Los Angeles	3.20c
New York (sheared and universal)	3.34c
New York (floor)	5.25c
Philadelphia	2.70c to 3.05c
Philadelphia, 3/16-inch	2.85c to 3.20c
Pittsburgh	3.00c
Portland	3.25c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.25c
St. Paul	3.25c

NO. 10 BLUE ANNEALED SHEETS

Boston, 3/16-inch	3.915c
Buffalo	3.90c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.65c
Los Angeles	3.75c
New York	3.89c
Portland	4.25c
Philadelphia	3.50c
San Francisco	3.75c
Seattle	4.50c
St. Louis	3.60c
St. Paul	3.75c

NO. 28 BLACK SHEETS

Boston	5.25c
Buffalo	4.60c
Chicago	4.10c
Cincinnati	4.55c
Cleveland	4.10c
Detroit	4.25c
Los Angeles	4.75c
New York	4.50c
Philadelphia	4.65c
Portland	5.25c
San Francisco	4.75c
Seattle	5.50c
St. Louis	4.60c
St. Paul	4.35c
Ft. Worth	5.50c

NO. 28 GALVANIZED SHEETS

Boston	6.25c
Buffalo	5.90c
Chicago	5.25c
Cincinnati	5.65c
Cleveland	5.25c
Detroit	5.50c
Ft. Worth	6.25c
Los Angeles (corr. 28 ga.)	6.00c
New York	5.65c
Philadelphia	5.85c
Portland	6.25c
San Francisco	6.00c
Seattle	6.50c
St. Louis	5.70c
St. Paul	5.60c

BANDS

Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.80c
Ft. Worth	4.65c
Los Angeles	4.05c
New York	3.99c
Philadelphia	3.75c to 3.90c
Pittsburgh	3.60c
Portland	4.25c
San Francisco	4.15c
Seattle	4.25c
St. Paul	3.90c

HOOPS

Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cleveland	3.65c
Detroit	4.30c
New York	4.49c
Philadelphia	4.00c to 4.25c
Pittsburgh	3.60c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds and hexagons	Flats and squares
Boston	4.05c	4.55c
Buffalo	3.90c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.90c	4.40c
Detroit	3.85c	4.35c
Los Angeles	5.25c*	.....
New York	4.00c	4.50c
Philadelphia	4.00c	4.50c
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....

*Rounds only.

COLD ROLLED STRIP

Boston, .100 inch, 500 lb. lots	6.30c
Buffalo	6.35c
Chicago	6.25c
Cincinnati	7.15c
Cleveland, over 500 lb. lots	5.95c
Detroit	6.20c
New York	6.25c
Philadelphia	6.25c
Pittsburgh	6.30c

FOREIGN IRON AND STEEL

New York duty paid

Swedish, hollow drill steel	15.00c
Swedish iron bars, round	6.75c
Flats and squares	7.00c

WELDED PIPE

Discounts from warehouse, New York City

Standard Steel Pipe

WROUGHT STEEL PIPE

	Black	Galvanized
⅛-inch butt	—28	+21
¼ to ⅜-inch butt	—36	— 3
½-inch butt	—46	—29
¾-inch butt	—51	—37
1 to 3-inch butt	—53	—39
2-inch lap	—40	—22
2½ to 6-inch lap	—48	—35
7 and 8-inch lap	—44	—17
9 and 10-inch lap	—38	—14
11 and 12-inch lap	—37	—12

WROUGHT IRON PIPE

	Black	Galvanized
¼ to ⅜-inch butt	+44%	+78%
½-inch butt	— 4	+19
¾-inch butt	—11	+ 9
1 to 1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
2½-inch lap	— 9	+ 6
3 to 6-inch lap	— 3	+ 6
7 to 12-inch lap	— 3	+16

Industrial Business Changes

ROLLER-SMITH CO., 233 Broadway, New York, has made several changes in its sales agencies. Maryland, Virginia and North Carolina, formerly covered by J. E. Perkins, Baltimore, are now covered by C. R. Speaker, Evening Star building, Washington, D. C., and with the District of Columbia, comprise his present territory. The Tennessee Engineering & Sales Co., Tennessee General building, Knoxville, Tenn., has had added to its territory Georgia, Florida and South Carolina, which, with Eastern Tennessee, form its territory. The former arrangement with W. A. McCombs & Co., Westinghouse building, Pittsburgh, has been transferred to a newly formed organization, the D-C Sales Engineering Co., at the same address. The personnel of the new organization comprises T. M. Cluley and G. S. Denithorne. Mr. Cluley as manager of W. A. McCombs has been identified with the Roller-Smith interests in the Pittsburgh section for several years.

* * *

A. M. Wood & Co., dealers in iron steel scrap, has removed its offices to rooms 825-829 at 1700 Walnut street, Philadelphia.

* * *

Union Drawn Steel Co. has moved its Philadelphia offices to rooms 938-940 Insurance Co. of North America building, 1600 Arch street.

* * *

Mechanical Pattern Works, Inc., Los Angeles, has changed its name to Mechanical Pattern & Foundry Co. Inc., and has moved its plant to 4545 Pacific avenue.

* * *

Central Steel Co., Massillon, O., has opened a southwestern sales office at 404 West First street, Tulsa, Okla., in charge of L. S. Allen.

* * *

Grobet File Corp. of America, a branch of the Grobet File Co., Vallorbe, Switzerland, has moved its offices from 64 Reade street, New York, to 3 Park Row.

* * *

Climax Engineering Co., Clinton, Iowa, has appointed the J. L. Latture Equipment Co., Portland, Oreg., sales representatives in Oregon, Washington and Idaho.

* * *

New York Wire Works Inc., manufacturer of railing and guards, 175 Morris avenue, Newark, N. J., Harry Isakoff president, is moving to 107 Hunterdon street, to obtain larger quarters.

* * *

Stockholders of the Electric Auto-Lite Co., Toledo, O., have approved the purchase at full book value of the American Bosch Magneto Corp. The transaction involves about $2,500,000.

* * *

Henry Disston & Sons Inc., has opened a service branch and warehouse in Detroit and will carry full stock of special steels, saws, files and knives. Service will be furnished for the surrounding territory.

* * *

Uehling Instrument Co., Paterson, N. J., has established a sales office at 619 Trust Co. of Georgia building, Atlanta, Ga., in charge of W. B. McBurney, for the sale of its instruments in Georgia and eastern Tennessee.

* * *

Strong-Scott Mfg. Co., Minneapolis, manufacturer of powdered coal combustion equipment, has appointed George W. Heald, 53 West Jackson boulevard, Chicago, its sales representative in that territory.

* * *

Crucible Steel Co. of America has moved its New York sales office and warehouse from 420 Canal street to larger quarters at Dominick and Clark streets. W. P. Knecht has recently been appointed office manager.

* * *

Black, Sivalls & Bryson, manufacturer of tanks, Bartlesville, Okla., Glenn Skinner general manager, has opened a branch office at Amarillo, Tex., in charge of J. R. Colter. A branch assembling plant may be established later.

* * *

Foote Bros. Gear & Machine Co., Chicago, has appointed T. R. Sanders, 180 Milk street, Boston, district sales representative covering Rhode Island and the eastern half of Massachusetts. He will work under direction of the New York office in charge of J. R. Shays Jr.

* * *

National Iron & Wire Co., Cleveland, has moved its entire plant and offices from 3901 Hamilton avenue to its new location at St. Clair avenue and East 222nd street where it has bought and equipped the plant of the E. W. Bliss Co. Its facilities for handling jobs of any size are much increased by the change.

* * *

Pending completion of its new offices at 801 Stephenson building, Detroit, offices of the Empire Steel Co. of Cleveland will be located temporarily at 1835 Dime Bank building. This office has just been established under direction of L. W. Cross as district manager of sales. The new offices will be ready May 1.

* * *

Milwaukee Electric Crane & Mfg. Co., Milwaukee, manufacturer of electric cranes, has established a district sales office at 50 Church street, New York, in charge of A. H. Ellison. The sales office at Chicago will be at room 1434 Roanoke building 11 South LaSalle street, in charge of Byron B. Evans, formerly in the company's sales office at Pittsburgh.

* * *

Rollway Bearing Co., Inc., Syracuse, N. Y., manufacturer of heavy duty roller bearings has made several changes in personnel of its sales force. C. A. Call, formerly assistant sales manager of the Gurney Ball Bearing Co., has been made sales manager. E. J. Lybert, formerly representing the company in the Philadelphia district, has been placed in charge of the Detroit district. J. D. Firmin, for several years with the engineering department of Niles-Bement-Pond Co., is made engineering representative in the Philadelphia district. W. E. Smith has been transferred from the home office to Youngstown, O., where he will assist Samuel Farrell, district representative. S. J. Kaiser continues the company's representative in the Chicago territory.

Iron and Manganese Ores and Minerals

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old Range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, f.o.b. cars Atlantic ports

Spanish low phosphorus, 52 to 54 per cent	11.00 to 12.00
Algerian low phosphorus, 52 to 54 per cent	10.00 to 10.50
Riff low phosphorus, 65 to 66 per cent	9.50 to 10.00
Swedish and Norwegian low phosphorus, 68 per cent	11.00 to 11.50
Swedish foundry or basic, 66 to 68 per cent	10.00
Spanish foundry or basic, 50 to 54 per cent	8.50 to 9.50
Algerian foundry and basic, 50 to 54 per cent	9.25 to 9.75

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian, minimum 47 per cent	nominal
Indian minimum 47 per cent	nominal
Caucasian, 53 to 55 per cent	

Washed, 42 cents c.i.f. tidewater

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$17.50 to 18.00
Washed gravel, imported duty paid eastern tidewater, per net tons	17.00 to 18.00

Construction and Enterprise

(*Continued from Page* 977)

Ingram president, 309 South Lakewood avenue, has bought a site and will build a plant. Company recently incorporated with $25,000 capital.

DETROIT—Hanley Mfg. Co. has been incorporated with $50,000 capital to manufacture special electrical devices by Frank H. Hanley, 136 West Elizabeth street, K. M. Regan and Arthur E. Koch.

DETROIT—Detroit & Windsor Ferry Co., foot Bates street, R. Gilchrist president, has let contract to Rosewarner, McNabb & Warswick, 610 Lincoln building, for loading dock and warehouse of steel and concrete.

DETROIT—Steel Penetrometer Co. has been incorporated with $50,000 capital to manufacture electrical instruments by T. B. Bindshedler, 1455 West Philadelphia avenue, W. A. Wood, and J. A. Jorgensen, Highland Park.

DETROIT—Clark & Jones Mfg. Co. has been incorporated with $25,000 capital and 25,000 shares no par, to manufacture lubricating devices by Devo Jones, 8729 Ferndale avenue. Joseph H. Clark, Minnie E. Clark, Algonac.

DETROIT—Detroit Power Screw Driver Co. has been incorporated with $25,000 capital to manufacture automatic hand and power driven tools by Alvan F. Larrabee, 2329 Seyburn avenue, Percy R. Elliott and John R. Matthews.

FENTON, MICH.—Fenton Machine Tool & Die Co., C. H. Lea secretary, is considering addition to plant for future expansion.

GRAND RAPIDS, MICH.—Jarecki Machine & Tool Co., Leonard Industrial building, has had plans made by William H. McCarthy, architect, for a new plant, 100 x 166 feet. Company manufactures special machinery, tools and dies.

IRON RIVER, MICH.—S. H. Newman Ore Co. has been incorporated with $50,000 capital to explore and mine iron ore by S. H. Newman, Algoma, Wis., Kate Youngs and Frank W. Youngs, Iron River.

JACKSON, MICH.—Frost Gear & Forge Co., is building a 1-story addition, 50 x 108 feet.

KALAMAZOO, MICH.—Kalamazoo Dimmer Co. has been incorporated with $5000 capital to manufacture automobile light switches by William J. Forrest, Royce and Morland streets, Harvey C. Schau and Morris Freidman.

MUSKEGON, MICH.—Piston Ring Co., 500 Sanford street, will build a 4-story addition 120x125 feet. C. E. Johnson is president.

PONTIAC, MICH.—Pontiac Pattern & Engineering Co., Sanford avenue, has had plans prepared for a 1-story addition to be built this spring.

DULUTH—Peterson & Olson, 312 North Fifty-sixth avenue, are having plans made for a garage and blacksmith shop 50 x 100 feet, one story.

JEFFERSON CITY, MO.—Ross Art Steel Co. has been incorporated with $20,000 capital by Thomas V. Ross, 1118 Scaritt building.

ST. LOUIS—Superior Cutting Die Co., 1410 Dodier street, has been incorporated with $15,000 capital by William D. Knupp and others.

ST. LOUIS—George F. Smith Co., 3327 Franklin street, has been incorporated by George D. Smith and others to manufacture industrial equipment and tools.

ST. LOUIS—Southern Wheel Co., W. F. Cutler president, Commonwealth building, Pittsburgh, has had plans drawn for two units, one story, 80 x 200 feet and 65 x 200 feet.

BLOOMFIELD, N. J.—Bloomfield Pattern Works, 497 Bloomfield avenue, has been incorporated and will enlarge its plant during this year.

BLOOMFIELD, N. J.—American La France Fire Engine Co., 67 Berkdale avenue, has let general contract to Walter Kidde & Co., 140 Cedar street, New York, for a 1-story factory 60 x 80 feet.

HARRISON, N. J.—Otis Elevator Co., Eleventh avenue and Twenty-sixth street, New York, will build an extension to its car shop, one story, 80 x 100 feet. General contract to James Stewart & Co. Inc., 17 East Forty-second street, New York.

HAWTHORNE, N. J.—United Piece Dye Works Inc., is having plans made for a power plant in connection with its works.

HOBOKEN, N. J.—New York Wire & Spring Co., Fifteenth street, manufacturer of bumpers and other automotive accessories, has bought plant of United Last Co., 136 Tichenor street, Newark, 175x200 feet, three stories, which will be equipped for its use and manufacturing operations started.

JERSEY CITY, N. J.—Blossburg Corp. has been incorporated with 1000 shares no par value to manufacture motors, engines and machinery by Joseph S. Meadow, Passaic, N. J.; William A. Durcan, New York, and Lillian Barker, Clifton, N. J.

JERSEY CITY, N. J.—Melco Mfg. Co. has been incorporated with $25,000 capital and 10,000 shares no par value to manufacture oil burning equipment by John Ritzen Jr., Ruth Beaver and Dave A. Sterling. D. A. Sterling, New York, is attorney.

KEARNY, N. J.—H. Kohnstamm & Co., 87 Park place, New York, will build a power house in connection with its new plant at Kearny, and a 1-story automobile service building and garage.

NEWARK, N .J.—Solderite Inc. has been incorporated with $25,000 capital to manufacture soldering specialties by Oscar Jaehnig, David Z. Jesselsohn and Rilda M. Pruden. David Z. Jesselsohn, Newark, is attorney.

NEWARK, N. J.—Superior Lamp & Automotive Equipment Co. Inc. has been incorporated with 999 shares no par value to manufacture automotive accessories by Louis W. Dinkelspiel, Newark.

NEWARK, N. J.—R. O. L. Co. has been incorporated to manufacture automobile appliances with $100,000 capital by Joseph J. Pallitta, Frederick G. Broou, Edward H. Faulkner. Pallitta & Pallitta, Newark, are attorneys.

NEWARK, N. J.—Newark Screw Products Co. has been incorporated with 2500 shares no par value by William H. Osborne Jr., Kenneth C. Hand, and H. Nelson Potts. Pitney, Hardin & Skinner, Newark, are attorneys.

NEWARK, N. J.—Ironbound Tool & Machine Co. has been incorporated with $100,000 capital to carry on a manufacturing business by Samuel Clare, Irvington, N. J.; Charles Gueritey, Passaic, N. J.; Daniel L. Strauss, Newark. Welanko & Strauss, Newark, are attorneys.

PATERSON, N. J.—Chemical Equipment Mfg. Co. has been incorporated with $100,000 capital to manufacture glass-lined and tin-lined acid-proof products by Traugott Tschudi, Ida Tschudi, August Gunthard and Frieda Gunthard. John E. Glasser, Paterson, is attorney.

PHILLIPSBURG, N. J.—Ingersoll-Rand Co., 11 Broadway, New York, manufacturer of mining and other machinery, will build a 3-story addition 65x175 feet. General contract to C. D. Stewart Contracting Co., Easton, Pa.

WALLINGTON, N. J.—Wallington Machine Co. has been incorporated with $20,000 capital by Cornelius White, and Jacob White, Wallington and Otis L. Fowler, Rutherford, N. J. James H. Penn, Passaic, is attorney.

NEW YORK—Capitol Lighter Co. has been incorporated to manufacture cigar lighters, with $200,000 capital, by A. Long, A. Johan-

sen and C. A. Carlson. R. Spear, 105 West Fortieth street, is attorney.

NEW YORK—Weil Fishel has been incorporated with $5000 capital to manufacture metal goods by H. L. Fishel, S. Weil and A. S. Weil. J. S. Gross, 160 Broadway, is attorney.

NEW YORK—Molybdenum Corp. of America has been incorporated with $20,000 capital to manufacture wire products by S. Mendel, L. Klein and J. S. Epstein. Epstein & Bros., 2 Rector street, are attorneys.

NEW YORK—Ampli-Products Co. has been incorporated with $5000 capital to manufacture electrical machinery by M. C. Jacobs, J. Jacobs and E. Kaplan. W. Sadoff, 1440 Broadway, is attorney.

NEW YORK—Harlem Pressing Machine Co. has been incorporated with $10,000 capital to manufacture machinery by S. Marche, M. Goldberg and S. Lande. J. Tenner, 154 Nassau street, is attorney.

NEW YORK—The General Engineering & Management Corp., 165 Broadway, has awarded 500 tons of steel for a power house at Whittaney, N. J., and is figuring on a similar tonnage for another power house at Miami, Fla.

NEW YORK—McCarthy Inserting & Sealing Machine Co. has been incorporated with $200,000 capital to manufacture envelope machinery by L. A. Olson, F. McCarthy and E. W. Gould. L. R. Jillson, 68 William street, is attorney.

NEW YORK—R. W. Rhoades Metaline Co. has been incorporated to manufacture dry lubricants, with $75,000 capital, by R. W. Rhoades, A. Payne and W. A. Perry. A. T. and B. B. Payne, Long Island City, are attorneys.

NEW YORK—American Air Cooled Block Arch Combustion Co. has been incorporated with $50,000 capital to manufacture special concrete arch forms for furnaces by J. Burger, J. J. Duff and J. Horden. C. H. Levitt, 1440 Broadway, is attorney.

PORTLAND POINT, N. Y.—Penn Cement Co., 131 East Forty-sixth street, New York, has let general contract to Turner Construction Co., 244 Madison avenue, New York, for a machine shop, pack house and eight silos and storage bins.

WELLSVILLE, N. Y.—Wellsville Foundry Corp. has been incorporated to operate a foundry with $20,000 capital by Charles M. Fedderman, 627 Magie avenue, Elizabeth, N. J.; O. Delford Fedderman, 178 Saranac avenue, New York, and J .Albert McEachern, Wellsville. Lee Fassett, Wellsville, is attorney.

COLERIDGE, N. C.—Enterprise Mfg. Co. is having plans made for a power house in connection with its cotton mill. Lockwood, Greene & Co., are engineers.

CINCINNATI—Witt Cornice Co., 2118 Winchell street, has given contract to the Austin Co. for a 1-story galvanizing plant 100 x 300 feet.

CINCINNATI, O.—Shepard Elevator Co. has bought plant and part of equipment of Mueller Machine Tool Co., 2427 Colerain avenue, and will remodel it for new purposes.

CINCINNATI, O.—Witt Cornice Co., 2118 Winchell avenue, J. W. Witt president, manufacturer of metal receptacles, has given contract to the Austin Co. for a galvanizing plant, 100x300 feet, monitor type.

CLEVELAND—Draper Mfg. Co., C. T. Draper president, is considering an extension of its steel barrel plant.

CLEVELAND—Upson-Walton Co., C. H. Mathews president, 1310 West Eleventh street, is building a 1-story addition to its plant.

CLEVELAND—Western Reserve Foundry Co., F. T. Chyall president, 1209 Marquette street, is considering a 2-story plant to be erected in about a year.

BLACKWELL, OKLA.—Ingersoll-Rand Co. has contract for four 80-horsepower direct-connecting engine compressor units for Cushing Refining & Gasoline Co. gasoline plant, recently taken over from the Tower Gasoline Co.

TULSA, OKLA.—Ryan Motor Co. has been awarded contract for five complete Fordson tractor core drilling units by Roxana Petroleum Corp. Pat Lewis is sales engineer.

BEAVER FALLS, PA.—Standard Steel Specialty Co. will build a 1-story foundry on Morado street.

BEAVER FALLS, PA.—Standard Steel Specialty Co., E. J. Wagner president, will build a 1-story addition 120x160 feet. Contract to Inland Construction Co., Pittsburgh.

ERIE, PA.—National Foundry Co., Sixteenth and Raspberry streets, will build a brick addition 40 x 60 feet to its plant.

PHILADELPHIA—Steel Heddle Mfg. Co., manufacturer of textile machinery, will build a 5-story addition for which equipment will be required.

PHILADELPHIA—Contract has been awarded by the Certain-teed Products Corp., Second and Erie streets, to Stoffiet & Tillotson, Wesley building, for a $175,000 warehouse.

PHILADELPHIA—Bids were closed March 29 by the Ballinger Co., architect, for a plant addition for the Kaufman Plush Co., Pechin and Pennsdale.

PHILADELPHIA—Contract has been awarded by the Pennsylvania Rapid Transit Co., 820 Dauphin street, for a $35,000 automatic sub-station on Eleventh street, south of Pattison.

PHILADELPHIA—The United Gas Improvement Co., this city, is low bidder on the erection of dam No. 51, Golconda, Ill. This project is in charge of federal engineers at Louisville, Ky., and will require about 1500 tons of steel.

PHILADELPHIA—West Philadelphia Iron Works has been incorporated with $10,000 capital to manufacture iron work, including ornamental designs, fences and fireproof doors by Samuel Smilk, 4845 Aspen street, Victor Temkin and S. Mollis Smilk.

READING, PA.—Keyser Fry Co., manufacturer of toys and bicycle parts, 618 North Eighth street, is having plans made for rebuilding burned portion of its plant.

ROYERSFORD, PA.—Ideal Foundry & Machine Works has been incorporated with $75,000 capital by J. R. Newborn and associates.

YORK, PA.—Wilford G. Henry Body Corp. has been incorporated with $20,000 capital to manufacture vehicles and parts by Wilford G. Henry, J. Nelson Dunnick and Gertrude C. Anstine.

KNOXVILLE, TENN.—Knoxville Screen & Mfg. Co., 340 Oakhill avenue, D. E. Parsons manager, has plans for considerable enlargement of its plant.

AMARILLO, TEX.—Davis Auto Parts Co., capital $75,000, chartered by C. D. Davis, Dave Currie and Henry Neal to deal in automotive accessories and operate repair shop for welding, etc.

AMARILLO, TEX.—Skelly Oil Co. will build a large gasoline plant on its properties 20 miles north of Panhandle, plant to be of the charcoal absorption type with daily capacity of 20,000,000 feet of gas and is closing contracts for several portable units. Embye Kay, Skelly building, Tulsa, Okla., is general superintendent gasoline department.

BRECKENRIDGE, TEX.—Brown Tool Co. has been incorporated with $75,000 capital by Charles Brown and C. E. Thomas.

HOUSTON, TEX.—Humble Oil & Refining Co. has acquired a 30-acre tank farm site in the Mirando pool, near Bruni, and contemplates construction of several steel tanks of 55,000 and 80,000 barrels capacity. A. M. Bowman, Humble building, is purchasing agent.

PORT ARTHUR, Tex.—Standard Brass & Mfg. Co., H. J. LeBlanc manager, has let contract to Truscon Steel Co., Youngstown,

Shanghai Good Market

MACHINERY imports of Shanghai, China, totaled about $5,916,000 *in 1925, of which the United states supplied 25 per cent, or* $1,479,000, *reports Acting Trade Commissioner G. C. Howard, Shanghai, to the department of commerce.*

American imports into Shanghai were exceeded only by those of Great Britain which furnished a value of $2,250,000 *constituting 38 per cent of Shanghai's total machinery imports. Japan ranked third with imports valued at* $690,200, *while Germany held fourth place with imports of* $547,400.

The following are among the largest machinery items imported from the United States: textile machinery, 386,097 *Haikwan tael* ($0.085); *cigar and cigaret machinery,* 189,866 *tael, printing machinery,* 193,393 *tael, propelling machinery,* 179,444 *tael. The largest British items are the following: cotton spinning machinery,* 817,640 *Haikwan tael; propelling machinery,* 450,150 *tael; printing machinery,* 183,771 *tael; pumps and pumping machinery,* 258,484 *tael.*

Refractories

FIRE CLAY BRICK
Per 1000 f.o.b. works

Pennsylvania, No. 1	$43.00 to 45.00
Pennsylvania, No. 2	35.00 to 40.00
Ohio, No. 1	43.00 to 46.00
Ohio, No. 2	38.00 to 40.00
Illinois, No. 1	40.00 to 43.00
Illinois, No. 2	35.00 to 38.00
Kentucky, No. 1	43.00 to 45.00
Kentucky, No. 2	40.00 to 43.00
Missouri, No. 1	43.00 to 46.00
Missouri, No. 2	35.00 to 38.00
Maryland, No. 1	43.00 to 47.00
Maryland, No. 2	39.00 to 42.00

SILICA BRICK

Pennsylvania	40.00
Chicago	49.00
Birmingham	48.00 to 52.00

MAGNESITE BRICK
Per Net Ton Seaboard Base

9 x 4½ x 2½	65.00

CHROME BRICK
(Per Net Ton)

9 x 4½ x 2½	45.00

O., for 50x110-foot plant and will install melting furnaces, core ovens, trolley system, molding machines, sand blast and complete machine shop equipment.

DALLAS, TEX.—Hinckley & Sons has been incorporated with $10,000 capital to manufacture steel products by D. T. Hinckley, 935 West Page street, and others.

SPOKANE, WASH.—Eric A. Johnson, vice president of Brown-Johnson Electric Co., is organizing a company to manufacture wrought iron furniture and expects to be producing by July 1.

SPOKANE, WASH.—Zonolite Co., James Keith president, is planning erection of a plant at Libby, Mont., equipped with revolving dryer, elevating and conveying machinery and ovens.

TACOMA, WASH.—Tennent Steel Casting Co. is having plans made for a 1-story foundry plant.

HUNTINGTON, W. VA.—International Nickel Co. has started construction of the first unit of a considerable addition to its plant. This unit will be 65 x 275 feet, one story.

HUNTINGTON, W. VA.—Huntington Iron Works Co. has taken a contract for structural steel for an addition to the plant of the Tri-State Refining Co., Kenova, W. Va. Vacuum pump and condenser will be included in the new equipment added.

PARKERSBURG, W. VA.—Rigg & Reel Co. is taking figures on a considerable addition to its plant here.

BEAVER DAM, WIS.—Malleable Iron Range Co., H. T. Burrow president, 715 North Spring street has let general contract to Hutter Construction Co. for a 2-story addition 100 x 110 feet.

KENOSHA, WIS.—Bids will be opened April 15 by C. M. Osborn, city manager, for the complete construction of a 2,500,000-gallon reservoir and all connections to the new filtration plant. The reservoir will cost $100,000 and the plans are by Alvord, Burdick & Howson, Chicago engineers. Peter J. Hurtgen is city engineer.

KILBOURN, WIS.—Robert Cramer, consulting engineer, Milwaukee, let the contract for pumps and motors for improvements to the local city water plant to the Dayton-Dowd Co., Quincy, Ill.

LA CROSSE, WIS.—Articles of incorporation have been filed by the Ford Lock Co., capital stock $30,000. It will manufacture locks and other specialties for Ford cars. The incorporators are Edward Kirchner, Leslie A. Hill and Chester R. Pieper.

MILWAUKEE—A. B. & B. Sheet Metal Works, C. Stolper president, 3300 Fond du Lac avenue, is taking bids on a 2-story sheet metal shop addition 40 x 100 feet.

MILWAUKEE—A plant, 56 x 140 feet, 1-story, will be built at 1321 Thirtieth street by the Milwaukee Brass Specialty Co., 3200 Senator avenue, this city. Byrne Bros., 3112 Burleigh street, are the general contractors.

MILWAUKEE—A $35,000 addition, 70 x 200 feet, will be erected for the Milwaukee Packard branch at Thirty-fifth street and Grand avenue by Paul Riesen's Sons, general contractors, 1042 Humboldt avenue. Architect Brust & Philipp, 405 Broadway, are in charge.

SUPERIOR, WIS.—A charter has been granted to the Sylphonix Refrigerator Co. of Superior to manufacture refrigerators, refrigerator units and similar goods. The capital stock is $30,000 and the incorporators are Walter K. Munch and L. R. McPherson.

WAUKESHA, WIS.—Bids will be taken until April 10 by E. R. Estberg, president of the board of education, for erecting the first unit of a new Junior high school, planned by Architects Parkinson & Dockendorff, LaCrosse, Wis. The initial work will cost $175,000.

WEST ALLIS, WIS.—Ths Fulton Co., automobile accessories, 732 Seventy-fifth avenue, has let contracts for the erection of a $35,000 shop addition.

Sells Much to Slovakia

CZECHOSLOVAKIA imported metalworking machinery valued at about $1,934,000 in 1925, compared with $1,101,000 in 1924, according to the industrial machinery division of the department of commerce. The countries supplying the largest portion of this trade were Germany and the United States, furnishing 71 per cent and 15 per cent, respectively. While the German share represented a slight decline from that of the previous year, the American percentage more than doubled.

In addition to this increased share of the United States in Czechoslovakia's imports of metalworking machinery, the value of the American shipments nearly trebled compared with those of 1924, increasing from 2,513,000 crowns to 9,713,000 crowns (average value of crown in 1925 was approximately $0.03). This is especially noteworthy when it is considered that the price per ton of the American equipment was double that of the German, $1059 and $534, respectively.

Business in Canada

HAMILTON, ONT.—The Garvin Hardware Co. Ltd. has been incorporated to manufacture hardware, with a capital stock of $100,000. Provisional Directors, Frederick A. Garvin, Helen G. Garvin and Alexander Dixon.

ST. CATHARINES, ONT.—T. F. Shurly Saw Works will rebuild buildings of its anchor department recently burned.

WINDSOR, ONT.—Frederic B. Stevens of Canada Ltd. has been incorporated to take over the business of Frederic B. Stevens Inc. manufacturers of foundry machinery, etc., with a capital of $100,000, by Frederic B. Stevens, Annie E. Stevens, William H. Cluff and others.

New Trade Publications

REFRACTORIES—Fire brick designed to resist the destructive effects of various factors of service are featured in a leaflet by the Ashland Fire Brick Co., Ashland, Ky.

GENERATING SETS—Standard Turbine Corp., Scio, N. Y., has issued a bulletin describing small turbo generator sets in sizes from one-half to 10 kilowatts.

OIL-CUPS—A wick-feed oil cup manufactured by the Hunter Pressed Steel Co., Lansdale, Pa., is described in a leaflet by that company. Another type utilizing pressure to feed grease to bearings also is featured.

FLASKS—Steel flasks of various sizes and forms are illustrated in the catalog recently mailed by the Shanafelt Mfg. Co., Canton, O. The flasks are of one piece welded construction and are built for heavy duty.

SPEED REDUCERS—Horsburgh & Scott Co., Cleveland, manufacturer of cut gears and rawhide pinions, has issued two bulletins on its worm gear speed reducers, giving much information on loads, shafts and bearings as applied to worm gears. A departure in method of mounting the gear is described and reasons given for the change.

TRANSPORTATION—Tramrail systems to facilitate the movement of materials around the plant are described in a folder published by the Cleveland Crane & Engineering Co., Wickliffe, O. These systems are operated either by hand or electrically.

AIR LIFTS—Chicago Pneumatic Tool Co., New York, has issued a bulletin featuring air compressors for lifting water in railroad service. Descriptions of several installations and their suitability to various requirements are given.

PUMPING ENGINES—Pipe line pumping engines manufactured by the Wilson-Snyder Mfg. Co., Pittsburgh, are described and illustrated in a bulletin by the company. Details of the pumps and views of typical installations are presented.

SWITCH RECEPTACLES—Safety circuit-breaking plugs and receptacles for connecting portable electric machines to the power line in the shop are shown in a catalog issued by the Crouse-Hinds Co., Syracuse, N. Y. These plugs and receptacles are designed to prevent short circuits and to smother arcs.

DIE CASTINGS—A brief review of the process including valuable engineering and metallurgical data are given in a catalog published by the Doehler Die-Casting Co., Brooklyn, N. Y. The catalog is of pocket size and well illustrated with photographs of castings turned by this process.

ELEVATORS—Two bulletins by the Revolvator Co., Jersey City, N. J., are the first of a series designed to cover the entire line of elevators, lifters, stackers, piling and tiering machines revolving, nonrevolving, open end and stationary, and other products of the company.

CAPACITATORS—Means for increasing the power factor on electric lines by means of apparatus manufactured by the General Electric Co., Schenectady, N. Y., forms the subject of a bulletin by that company. Instances are related of large increases in available power without additional generating equipment.

European Iron and Steel Statistics

Gross Tons

Pig Iron Production

	United Kingdom	France	Belgium	Luxembourg
Monthly average 1912..	729,000	405,000	192,000	184,800
Monthly average 1913..	855,000	427,000	203,800	209,000
Monthly average 1919..	617,000	198,000	20,600	50,000
Monthly average 1920..	669,500	281,700	92,700	58,000
Monthly average 1921..	217,600	280,300	71,800	79,600
Monthly average 1922..	403,300	428,900	131,500	137,500
Monthly average 1923..	619,900	437,100	179,100	.....
Monthly average 1924..	607,700	627,900	233,100	.....
1925				
January	574,500	658,900	245,600	197,430
February	541,900	627,000	241,800	176,514
March	607,900	688,871	281,560	198,737
April	569,800	686,130	267,850	.....
May	574,700	695,200	270,500	186,800
June	510,300	692,400	209,400	187,100
July	492,700	712,800	165,800	199,400
August	444,500	701,400	163,400	198,700
September	448,700	705,400	167,600	192,700
October	473,700	727,800	171,500	201,800
November	494,100	728,200	166,100	196,400
December	503,400	736,700	159,000	196,500
1926				
January	533,500	.....	135,600	200,500

Imports

	United Kingdom	France	Belgium	Germany
Average monthly 1912..	166,400	16,400	87,000	27,300
Average monthly 1913..	185,900	12,900	68,900	25,000
Average monthly 1919..	42,400	113,100	44,400	.....
Average monthly 1920..	92,400	89,000	67,000	26,200
Average monthly 1921..	137,100	38,500	43,300	.....
Average monthly 1922..	73,500	64,300	42,000	152,300
Average monthly 1923..	110,233	58,700	45,500	144,300
Average monthly 1924..	203,500	570,800	48,400	104,600
1925				
January	234,800	26,500	.....	241,800
February	234,900	16,700	75,100	47,000
March	244,900	15,500	61,200	65,200
April	282,857	16,600	38,900	72,700
May	205,424	11,100	40,300	95,500
June	201,700	11,100	41,600	117,900
July	306,600	19,700	33,000	96,900
August	232,800	14,000	29,600	91,000
September	194,000	17,000	41,900	110,300
October	218,300	13,900	46,200	95,000
November	212,200	12,000	.....	88,700
December	249,500	11,600	.....	59,200
1926				
January	221,700	.....	.....	.....

Ingots and Castings Production

	United Kingdom	France	Belgium	Luxembourg
Monthly average 1912..	566,000	363,000	206,000	79,400
Monthly average 1913..	639,000	385,000	202,300	109,000
Monthly average 1919..	658,000	179,000	27,400	32,000
Monthly average 1920..	755,600	250,200	101,300	49,000
Monthly average 1921..	302,100	254,500	65,000	62,300
Monthly average 1922..	486,000	372,000	128,200	114,000
Monthly average 1923..	707,400	408,600	194,483	98,250
Monthly average 1924..	677,600	566,600	237,200	.....
1925				
January	605,100	598,600	236,200	170,856
February	652,300	560,100	235,900	157,227
March	684,700	607,076	268,550	178,367
April	597,600	586,977	250,990	.....
May	651,600	587,000	248,800	164,500
June	585,400	590,500	193,600	168,400
July	590,400	615,600	152,700	179,100
August	477,100	607,100	147,900	170,800
September	640,100	621,800	162,000	177,400
October	652,400	657,900	168,600	182,100
November	653,800	637,000	154,000	170,900
December	606,800	648,200	155,500	173,400
1926				
January	640,400	.....	114,400	171,200

Exports

	United Kingdom	France	Belgium	Germany
Average monthly 1912..	400,600	41,500	124,500	482,400
Average monthly 1913..	414,100	48,200	128,800	517,300
Average monthly 1919..	186,100	19,400	14,500	.....
Average monthly 1920..	270,900	74,600	74,300	143,600
Average monthly 1921..	141,700	132,700	75,900	176,000
Average monthly 1922..	283,400	164,000	143,000	209,700
Average monthly 1923..	359,975	173,700	208,466	108,900
Average monthly 1924..	320,200	231,100	285,000	127,600
1925				
January	325,400	270,300	.....	270,600
February	298,800	261,100	527,900	218,600
March	312,200	281,200	285,100	297,000
April	301,027	284,300	267,600	218,000
May	322,140	286,200	283,200	247,300
June	275,700	318,800	275,800	215,100
July	306,600	329,500	256,000	251,400
August	287,800	338,200	195,900	272,900
September	273,200	376,000	277,500	282,700
October	368,800	296,600	225,100	332,500
November	322,200	390,200	257,200	285,600
December	340,800	433,800	.....	331,600
1926				
January	336,700	.....	.....	.....

American Iron and Steel Exports and Imports

Gross Tons

	Imports	Exports
1926		
January	79,067	174,585
February	100,213	157,187
1925		
January	77,065	141,714
February	92,380	102,302
March	92,110	155,386
April	71,249	155,426
May	68,117	150,612
June	83,330	136,847
July	64,642	138,670
August	68,489	188,963
September	68,445	136,754
October	80,163	141,817
November	79,771	171,134
December	98,400	142,209
Totals	943,240	1,762,571
1924		
December	69,281	129,376
November	34,300	124,464
October	40,877	158,553
September	45,216	135,894
August	44,928	136,025
July	30,410	138,845
June	60,474	172,982
May	66,805	168,172
April	50,975	132,739
March	39,279	124,762
February	42,054	168,191
January	26,677	251,284
Total	556,733	1,805,064
1923		
December	27,012	179,215
November	26,534	186,770
October	29,884	154,079
September	36,612	173,664
August	45,432	163,010
July	53,448	170,259
June	68,019	172,747
May	75,891	204,988
April	77,909	179,159
March	106,206	165,624
February	67,707	135,182
January	120,080	124,444
Total	734,734	2,009,141
1922		
December	96,358	154,087
November	152,250	124,004
October	184,202	131,542
September	76,393	128,370
August	49,054	144,264
July	62,426	157,027
June	39,154	216,298
May	23,098	229,616
April	18,720	197,562
March	12,774	206,474
February	11,535	133,333
January	13,404	155,962
Total	643,010	1,988,539
Yearly Totals		
1921	117,105	2,156,818
1920	448,833	4,920,913
1919	327,490	4,405,281
1918	168,225	5,372,424
1917	324,565	6,442,240
1916	310,891	5,947,646
1915	282,396	3,532,564
1914	289,775	1,549,554
1913	317,260	2,745,635
1912	225,072	2,947,596
1911	262,457	2,187,725
1910	510,730	1,537,943
1909	363,984	1,243,583
1908	205,845	964,242
1907	662,358	1,301,981
1906	577,809	1,325,740
1905	416,000	1,010,255
1904	266,398	1,167,674
1903	1,178,797	326,590
1902	1,212,484	411,915
1901	221,297	81,211
1900	209,955	286,687

Iron and Steel Freight Rates

Finished Material

Pittsburgh, 100 pounds, carloads, to:	
Atlanta	$0.58
Baltimore	.31
Birmingham	.58
Boston	.365
Buffalo	.265
Chattanooga	.50
Chicago	.34
Cincinnati	.295
Cleveland	.19
Columbus	.255
Dallas (tin plate .90)	1.02
Denver	1.15
Detroit	.295
Duluth	.60
Indianapolis	.31
Kansas City	.735
Louisville	.33
Milwaukee	.37
Minneapolis and St. Paul	.60
New Orleans	.67
New York	.34
Omaha	.735
Pacific coast (tin plate)	.90
Pacific coast (all rail)	1.15
Philadelphia	.32
South Bend, Ind.	.32
St. Louis	.43
Toledo	.27
Topeka	.85
Youngstown	.11
Chicago, Gary, Indiana Harbor, Evanston, Joliet, and Waukegan to:	
Aberdeen, S. D.	$0.55
Ashland, Wis., and Duluth	3.05
Atlanta	.58
Beaumont (pipe .49)	.68
Birmingham	.53
Cairo, Ill.	.245
Caspar, Wyo. (pipe .835)	1.00
Cedar Rapids, Iowa (wire .345)	.245
Chattanooga	.49
Dallas (pipe .69)	.84
Denver	.83
Des Moines, Iowa	.295
Detroit	.275
Evansville, Ind.	.28
Grand Rapids, Mich	.26
Green Bay, Manitowoc, Wis.	.205
Indianapolis (pipe .25)	.155
Kalamazoo, Mich	.22
Kansas City (pipe .35)	.415
Madison, Wis.	.115
Memphis (all rail)	.42
Memphis (rail and river)	.35
Milwaukee	.08
Minneapolis, St. Paul; Waterloo, Iowa	.275
Muskogee, Okla. (pipe .60)	.69
New Orleans (all rail)	.57
New Orleans (rail and river)	.47
Omaha (pipe .35)	.415
Pacific Coast (tin plate. 75)	1.00
Peoria (pipe .155)	.13
Pine Bluff, Ark. (pipe .55)	.46
Rock Island, Ill.	.155
Sioux City, Iowa, St. Joseph, Mo., and other Missouri river points (pipe .35)	.415
South Bend, Ind. (sheets .13)	.185
St. Louis	.175
St. Paul	.275
Terre Haute, Ind. (pipe .24)	.155
Topeka, Kans. (pipe .435)	.51
Tulsa, Okla. (pipe .60)	.69
Waterloo, Iowa	.275
Cleveland to:	
Akron	$0.09
Atlanta	.57
Baltimore	.37
Boston	.43
Buffalo	.25
Canton	.095
Chattanooga	.50
Chicago	.30
Cincinnati	.27
Columbus	.215
Detroit (rail)	.235
Indianapolis	.28
New Orleans	.65
New York	.40
Philadelphia	.38
St. Louis	.36
Toledo	.20
Youngstown to:	
Akron	$0.095
Atlanta	.58
Baltimore	.345
Beaumont, Tex. (pipe .67)	.87
Boston	.405
Buffalo	.25
Canton	.095
Caspar, Wyo.	1.15
Chattanooga	.50
Chicago	.32
Cincinnati	.285
Cleveland	.095
Coffeyville, Kans.	.87
Columbus	.25
Dallas (pipe .855)	1.02
Denver (pipe. 1.115. Min. 60,000 lbs.	1.13
Detroit	.265
Indianapolis	.30
Little Rock, Ark. (pipe .75)	.70
Memphis	.54
New Orleans	.66
New York	.375
Pacific coast	1.15
Philadelphia	.355
Shreveport, La. (Pipe .84)	.79
Smackover, Ark. (Pipe .82)	.77
St. Louis	.38
Toledo	.24
Tulsa, Okla. (Pipe .855)	.87
Wichita, Kans. (pipe .855)	1.02
Lorain to:	
Atlanta	$0.57
Bakersfield, Long Beach, and Los Angeles	1.15
Beaumont, Tex.	.655
Caspar, Wyo.	1.125
Chattanooga	.50
Chicago	.36
Cincinnati	.265
Cleveland	.07
Coffeyville, Kans.	.70
Dallas	.84
Detroit	.215
Kansas City	.63
New Orleans	.65
*Shreveport, La.	.76
Smackover, Ark.	.77
St. Louis	.355
Tulsa, Okla.	.84
Wichita	.84

*Minimum 80,000 pounds.

From:	Coatesville, Pa.	Bethlehem, Pa.	Harrisburg, Pa.
To:			
Baltimore	$0.145	$0.19	$0.145
New York	.175	.145	.19
Philadelphia	.10	.13	.145

From:	Lebanon, Pa.	Phoenixville, Pa.	Pottsville, Pa.
To:			
Baltimore	$0.155	$0.155	$0.19
New York	.10	.175	.19
Philadelphia	.13	.095	.145

From	Johnstown, Pa.	Claymont, Pa.	Pencoyd, Pa.
To:			
Baltimore	$0.285	$0.145	$0.155
New York	.32	.175	.175
Philadelphia	.295	.08	.06

From / To:—	Boston	Worcester	Providence	New Haven
Pennsylvania				
Catesville	$0.255	$0.255	$0.255	$0.255
Harrisburg	.255	.255	.255	.255
Johnstown	.350	.350	.350	.350
Philadelphia	.255	.255	.255	.255
Phoenixville	.255	.255	.255	.255
Pittsburgh	.365	.365	.365	.365
Pottsville	.255	.255	.255	.255
Reading	.255	.255	.255	.255
South Bethlehem	.255	.255	.255	.255
New York				
Buffalo	.345	.345	.345	.345
Lackawanna	.345	.345	.345	.345
Syracuse	.310	.310	.310	.310
Tonawanda	.345	.345	.345	.345
New Jersey				
Perth Amboy	.255	.255	.245	.245
Ohio				
Youngstown	.405	.405	.405	.405
Connecticut				
Collinsville	.220	.210	.215	.160
Southington	.220	.205	.210	.140
Rhode Island				
Phillipsdale	.165	.165	.110	.215
Massachusetts				
Danvers	.750	.100	.195	.225
Fitchburg	.950	.145	.185	.220
W. Wareham (R. R. Station Treamount)	.165	.190	.165	.220
Worcester	.165	...	.165	.165

Pig Iron

Mahoning and Shenango valleys to:	
Boston	6.43
Chicago	4.79
Cleveland	$1.76
Minneapolis, St. Paul	7.83
Newark, N. J.	6.03
Philadelphia	5.63
Pittsburgh	1.76
St. Louis	5.80
Buffalo to:	
Albany, N. Y.	$2.27
New England (rail)	4.91
New York and Brooklyn (rail)	4.91
Philadelphia	4.91
Rochester	1.39
Virginia furnaces to:	
Brooklyn, Jersey City, Newark	5.54
New England	5.92
Philadelphia	$5.17
Birmingham, Ala., to:	
Boston (rail)	$9.61
Boston (rail and water)	6.91
Chicago	6.01
Cincinnati	3.69
Cleveland	6.01
Jersey City	8.05
Louisville, Ky.	3.72
Minneapolis, St. Paul	8.77
New York	9.24
Newark	8.28
Philadelphia (rail)	7.81
Philadelphia (rail and water)	6.01
Pittsburgh	6.84
St. Louis	4.42
Chicago to:	
Des Moines	$4.24
Milwaukee	1.00
Minneapolis, St. Paul	3.04
Moline, Ill.	1.76
Omaha	4.97
St. Louis	4.42
Ironton and Jackson, O., to:	
Chicago	$4.79
Cincinnati	2.27
Cleveland	3.02
Detroit	3.21
Indianapolis	2.90
Minneapolis, St. Paul	7.83

Export Rail Rates

Manufactured Iron and Steel

From	To New York	To Baltimore	To Boston	To Philadelphia	To Pacific Coast
Chicago	$42.50	$39.50	$42.50	$40.50	$50.00
Cincinnati	37.00	34.00	37.00	35.00	72.00
Cleveland	30.00	27.00	30.00	28.00	72.00
Pittsburgh	25.50	22.50	25.50	23.50	72.00
South Bethlehem	11.00	14.50	....	10.00	....
Wheeling	25.50	22.50	25.50	23.50	72.00
Youngstown	28.50	25.50	28.50	26.50	72.00

Billets

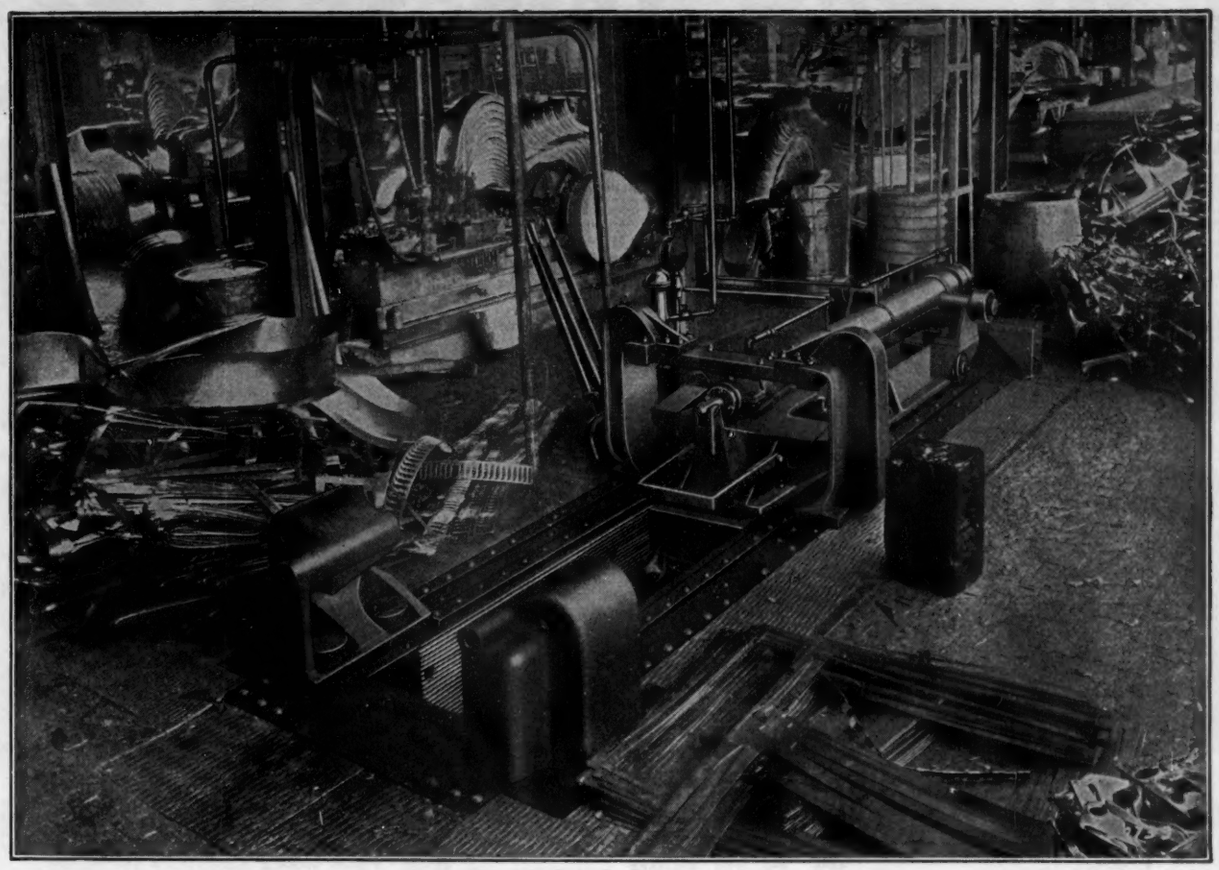
Per Gross Ton

From	To New York	To Baltimore	To Boston	To Philadelphia	To Pacific Coast
Chicago	$7.10	$6.50	$7.10	$6.70	$11.20
Cincinnati	6.20	5.60	6.20	5.80	16.13
Cleveland	5.00	4.40	5.00	4.60	16.13
Pittsburgh	4.30	3.70	4.30	3.90	16.13
Wheeling	4.30	3.70	4.30	3.90	16.13
Youngstown	4.70	4.10	4.70	4.30	16.13

Rails

Per Gross Ton

From	To New York	To Baltimore	To Boston	To Philadelphia	To Pacific Coast
Chicago	$6.75	$6.15	$6.75	$6.35	$11.20
Pittsburgh	4.00	3.70	4.00	3.80	15.46
Youngstown	4.20	3.90	4.20	4.00	...



Typical Installation in Well-Known Automobile Plant

WHY SHEET-SCRAP CAN BE PROFITABLY COMPRESSED

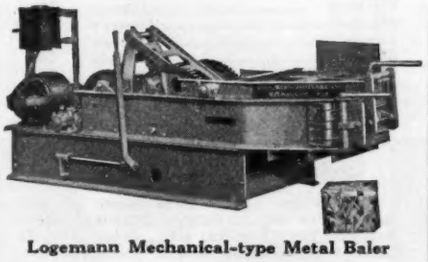
It commands at all times the best price;
It can be more conveniently stored;
It can be more economically handled;
It can be readily held for favorable markets;
It practically eliminates corrosion;
It permits of loading cars to capacity;
It saves much heat in remelting.

LOGEMANN SCRAP-METAL PRESSES

Hydraulic and Mechanical Types

LOGEMANN BROTHERS COMPANY
3126 Burleigh St. Milwaukee, Wis.

Also presses making crucible-size bricks of copper, brass, aluminum and other metals.



Logemann Mechanical-type Metal Baler

Please indicate character of scrap, quantity and heaviest gauge, when writing.

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount of $4 per ton higher net.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis or $5 per ton higher net.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	46	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

⅛-inch	42	12½
¼ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	33	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis

TREADS AND COUPLINGS

Butt weld

⅛ and ¼-inch	+11	+39
⅜-inch	22	2
½-inch	28	11
¾ to 1½-inch	30	13

Lap Weld

1¼ and 1½-inch	Upon	application
2-inch	23	7
2½ to 6-inch	26	11
3 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

⅛ and ¼-inch	+19	+54
⅜-inch	21	7
½-inch	28	12
¾ to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
8 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
½-inch	+28	+40
1-inch	+34	+40
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)

2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
3½ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3½ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off

Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Net prices per foot f.o.b. Pittsburgh

Outside diameter	Gage	Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅜-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c
Plates less than ¼-inch or lighter than 11 pounds per square foot.	
Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates not Exceeding 72 inches Wide

Plates less than ¼-inch gage, to and including $\frac{3}{16}$-inch; or lighter than 10.2 pounds per square foot to and including 7.65 pounds per square foot ..... .20c

Plates Over 72 Inches Wide

Plates less than ¼-inch gage, to and including $\frac{3}{16}$ inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot ..... .20c

Plates ordered 7.65 pounds per square foot ..... .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull material subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c

Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet....No extras

Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.25c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (including straight taper plates)

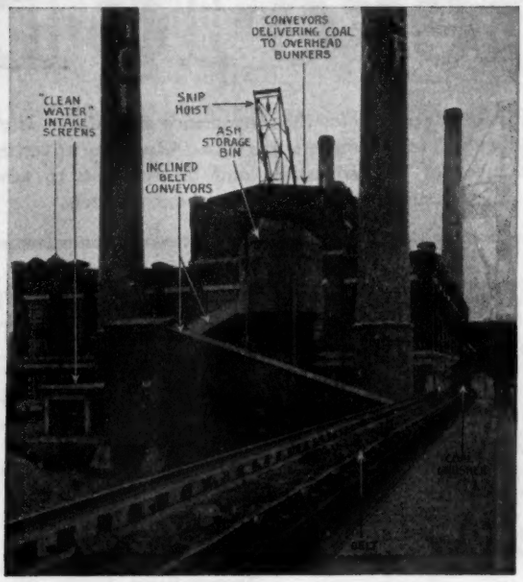
Additional extra ..... .10c

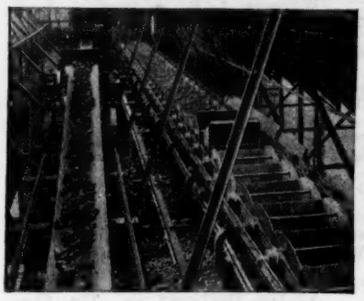
Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)

Additional extra ..... .20c

For Material Handling
See the Nearest Link-Belt Engineer



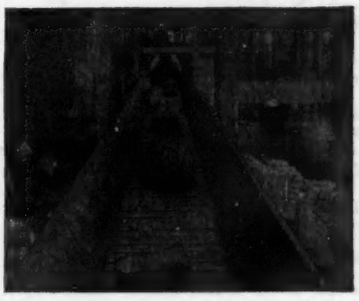


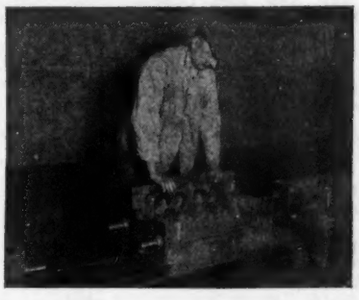
YOU can place implicit confidence in Link-Belt—our engineers have been called upon to solve material handling problems, over a period of fifty years.

Our policy of designing machinery to meet the particular conditions under which it is to operate, has resulted in world-wide successful installations.

Because the Link-Belt line of material handling equipment is so complete—our recommendations are made without prejudice as to the type of equipment to be used. All Link-Belt machinery is built in our own manufacturing plants, under the supervision of the designing engineers.

It will pay you to let Link-Belt design and build your material handling elevators and conveyors. Send for Catalogs. Address nearest office.





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LINK-BELT COMPANY

Leading Manufacturers of Elevating, Conveying and Power Transmission Chains and Machinery

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St. Louis - - - - - - - - 3638 Olive St.
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Denver - - - - - - - 520 Boston Bldg.
Louisville, Ky. - - - - 321 Starks Bldg.
New Orleans - 504 New Orleans Bank Bldg.
Birmingham, Ala. - 720 Brown-Marx Bldg.
Atlanta, 610 Citizens & Southern Bank Bldg.
Toronto 2, and Montreal, Link-Belt Limited

H. W. CALDWELL & SON CO.:—Chicago, 1700 S. Western Ave.; New York, 2676 Woolworth Bldg.; Dallas, Texas, 810 Main St.

LINK-BELT MEESE & GOTTFRIED CO.:—San Francisco, 19th and Harrison Sts.; Seattle, 820 First Ave., S.; Portland, Ore., 67 Front St. Los Angeles, 400 E. Third St.; Oakland, Calif., 526 Third St.; Fresno, Calif., 215 Brix Bldg.

LINK-BELT
Material Handling Equipment

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Leavitt, C. W., & Co., 30 Church St., New York City.
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ALUMINUM (Vanadium)
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Bethlehem Steel Co., Bethlehem, Pa.

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Franklin Steel Works, Franklin, Pa.
Illinois Steel Co., 208 S. LaSalle St., Chicago, Ill.
Illinois Steel Warehouse Co., 1319 Wabansia Ave., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Pacific Coast Steel Co., Rialto Bldg., San Francisco, Calif.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Tennessee Coal, Iron & Railroad Co., 1351 Brown-Marx Bldg., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, O.

BARS, STEEL (Electric Furnace)
Timken Roller Bearing Co., The, Canton, Ohio.

BASKETS (Wire)
Meyers, Fred J., Mfg. Co., The, Hamilton, O.

BEAMS, CHANNELS, ANGLES, ETC.
Bethlehem Steel Co., Bethlehem, Pa.
Blystone Mfg. Co., Ironton St., Cambridge Springs, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Phoenix Iron Co., The, 20 So. 15th St., Philadelphia, Pa.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Snead Architectural Iron Works, Louisville, Ky.

BEARINGS (Ball)
Hoover Steel Ball Co., Ann Arbor, Mich.
New Departure Mfg. Co., The, Bristol, Conn.
Norma-Hoffman Bearings Corp., Stamford, Conn.

BEARINGS (Journal)
Hyatt Roller Bearing Co., Newark, N. J.
Keystone Bronze Co., 39th St., Pittsburgh, Pa.

BEARINGS (Motor)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Roller)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffman Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BEARINGS (Thrust)
Hoover Steel Ball Co., Ann Arbor, Mich.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BELT CEMENT AND DRESSING (Leather)
Williams, I. B., & Sons, Dover, N. H.

BELT LACING (Leather)
Chicago Rawhide Mfg. Co., 1308 Elston Ave., Chicago, Ill.
Williams, I. B., & Sons, Dover, N. H.

BELTING (Chain)
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

BELTING (Leather)
Chicago Rawhide Mfg. Co., 1308 Elston Ave., Chicago, Ill.
Williams, I. B., & Sons, Dover, N. H.

BENCHES AND FRAMES (Drawing)
Morgan Construction Co., Worcester, Mass.
Vaughn Machinery Co., The, Cuyahoga Falls, O.

BENDING AND STRAIGHTENING MACHINES
Cleveland Punch & Shear Works Co., 3917 St. Clair Ave., Cleveland, O.
Hinman, D. A., & Co., Sandwich, Ill.
Kane & Roach, Niagara and Shonnard Sts., Syracuse, N. Y.
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.
Long & Allstatter Co., Hamilton, O.
Sutton-Abramsen Engineering Co., Park Bldg., Pittsburgh, Pa.

BENZOL AND TOLUOL RECOVERY PLANTS
Koppers Co., The, Union Trust Bldg., Pittsburgh, Pa.

BILLETS (Forging)
Bethlehem Steel Co., Bethlehem, Pa.
Midvale Co., The, Nicetown, Philadelphia, Pa.

BILLETS (Forging, Alloy Steel)
Bethlehem Steel Co., Bethlehem, Pa.

BILLETS AND BLOOMS
American Rolling Mill Co., Middletown, O.
American Tube & Stamping Co., The, Bridgeport, Conn.
Andrews Steel Co., Newport, Ky.
Bethlehem Steel Co., Bethlehem, Pa.
Central Steel Co., The, Massillon, Ohio.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Illinois Steel Co., 208 South La Salle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Interstate Iron & Steel Co., 104 S. Michigan Ave., Chicago, Ill.
Wood, Alan, Iron & Steel Co., Widener Bldg., Philadelphia, Pa.

BLANKS (Ring, Gear and Sprocket)
Akron-Selle Co., Akron, O.
Strong Steel Foundry Co., 33 Norris St., Buffalo, N. Y.

BLAST FURNACES—See FURNACES (Blast)

BLOWERS
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., 11 Broadway, New York City.
Spencer Turbine Co., Hartford, Conn.

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